

ALCOHOL-IMPAIRED DRIVING IN ILLINOIS



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Abstract: Driving under the influence of alcohol (DUI) is a persistent but preventable problem that creates a risk of injury or death for all individuals on the road. This article provides an overview of policies to prevent and reduce alcohol-impaired driving, an analysis of related data from Illinois, and a review of existing research on interventions to combat driving under the influence. Researchers found the number of DUI arrests and alcohol-related fatal accidents in Illinois have remained stable or decreased in the past decade. However, further research is needed to fully understand the impact of law enforcement efforts and new technology to address alcohol-impaired driving.

Introduction

In a survey of residents in select large U.S. cities, 86 percent reported concerns about impaired driving and almost two-thirds of respondents wanted officials to prioritize action to stop impaired driving.¹ While the number of total motor vehicle fatalities has been declining, the proportion related to alcohol has remained constant in recent years.² Alcohol impairment is a factor in one-third of all U.S. motor vehicle fatalities.³

Illinois law defines the term “driving under the influence” (DUI) as driving or being in actual physical control of a motor vehicle while impaired by alcohol or other drugs [625 *ILCS* 5/11-501]. The statute includes a prohibition of driving while under the influence of any amount or combination of illegal or legal drugs that render a person incapable of driving safely.⁴ DUI and “DWI” (driving while intoxicated) are commonly used interchangeably in conversation. DUI is the only term used in Illinois law, while other states use DWI exclusively; some states use both, with DUI referring to a lower level offense than DWI.⁵

This article provides an overview of policies related to alcohol-impaired driving, offers an analysis of related Illinois arrest data, and reviews the existing research on the efficacy and challenges of impaired driving policies and programs.

How Does Law Enforcement Detect and Measure Impairment in Drivers?

Officers can stop individuals if they have probable cause or reasonable suspicion of impairment, if the vehicle is being operated in an unusual manner, and during roadside safety checks.⁶ A driver under suspicion of impairment will be asked to complete field sobriety tests and the test results may give an officer probable cause to arrest the driver for DUI and request chemical testing for alcohol or drugs.⁷

The implied consent law in Illinois holds that by obtaining a driver’s license, an individual consents to providing a sample of breath, urine, or blood if suspected by police of a DUI.⁸ If an individual refuses to be tested or tests positive for illegal drugs or alcohol over the legal limit, their license will be administratively suspended summarily according to statute.⁹ If the individual refuses to submit to chemical testing of breath, urine, or blood, the suspension will be for one year for a first offense or three years for any additional offense within five years.¹⁰ An individual who fails a chemical test will receive a six month license suspension for a first offense or one year for any additional offenses within five years.¹¹ If an individual is injured in a motor vehicle accident and requires emergency medical treatment, the results of any medically necessary drug and alcohol testing must be shared with law enforcement.¹²

Blood Alcohol Content

Blood alcohol content (BAC) is a measurement of the ratio of alcohol to blood in a person’s body.¹³ The level of BAC corresponds very closely to the level of impairment experienced by a person.¹⁴ BAC can be measured through chemical testing of urine or blood.¹⁵ On the scene, officers can employ breath alcohol testing devices (“breathalyzers”) to test a driver’s breath alcohol level, which is indicative of an individual’s BAC; this method is preferred due to the less invasive nature and immediate results.¹⁶

Laws in all 50 states prohibit driving with a BAC greater than 0.08 g/dL; drivers under the legal drinking age of 21 are subject to “zero-tolerance laws” where a BAC of 0.02 g/dL (i.e. the typical threshold for reliable detection) or greater is against the law.¹⁷ The decades-long and large decline in fatalities is attributable in part to this common limit.¹⁸ The Utah legal BAC limit was recently further reduced to 0.05.¹⁹ One hundred nations also employ a 0.05 BAC limit; research indicates this lower limit is associated with a decrease in impaired driving.²⁰

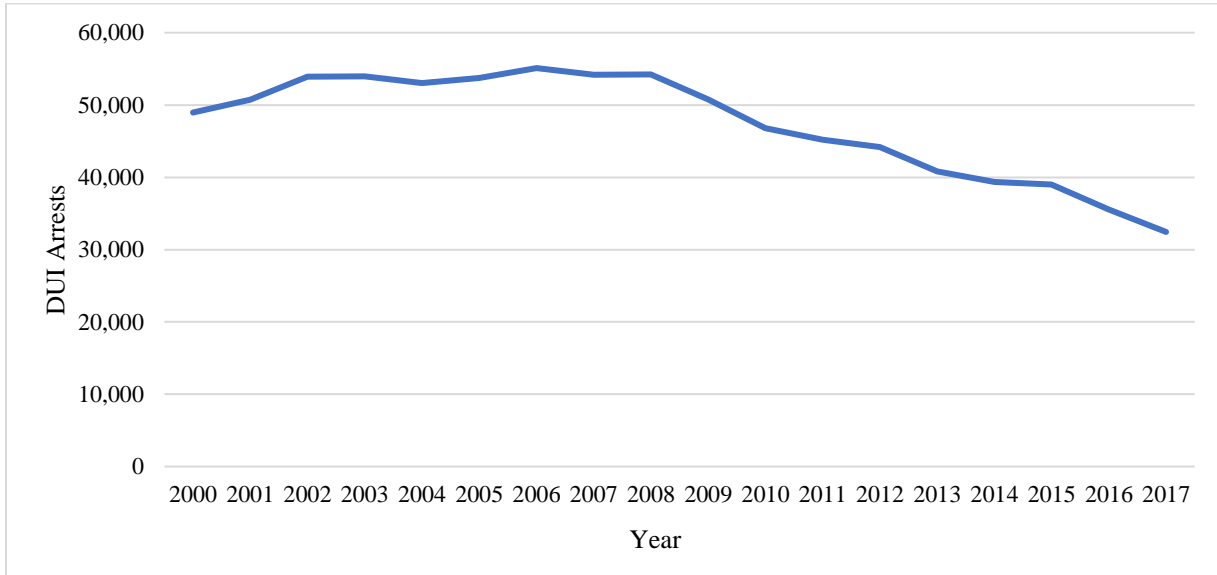
Individuals with a BAC between 0.05 and 0.08 g/dL at the time of arrest may be convicted of a DUI in Illinois if there is additional evidence that the driver was impaired.²¹ Many sentencing decisions in DUI cases (particularly for first-time offenders) are based on the BAC level at the time of arrest, with higher levels (i.e. BAC over 0.16) carrying harsher sanctions.²² However, higher BAC levels at arrest are not significantly predictive of an individual having an alcohol use disorder.²³ Alcohol use disorders can only be diagnosed by a clinician employing the diagnostic criteria found in the DSM-V.²⁴ There are existing effective [therapies and medications](#) that can treat alcohol use disorders. BAC alone is not an ideal predictor of the likelihood of recidivism; additional factors to be considered include age at time of first DUI conviction and prior alcohol or drug offense convictions.²⁵

Illinois DUI Data Analysis

DUI Arrests

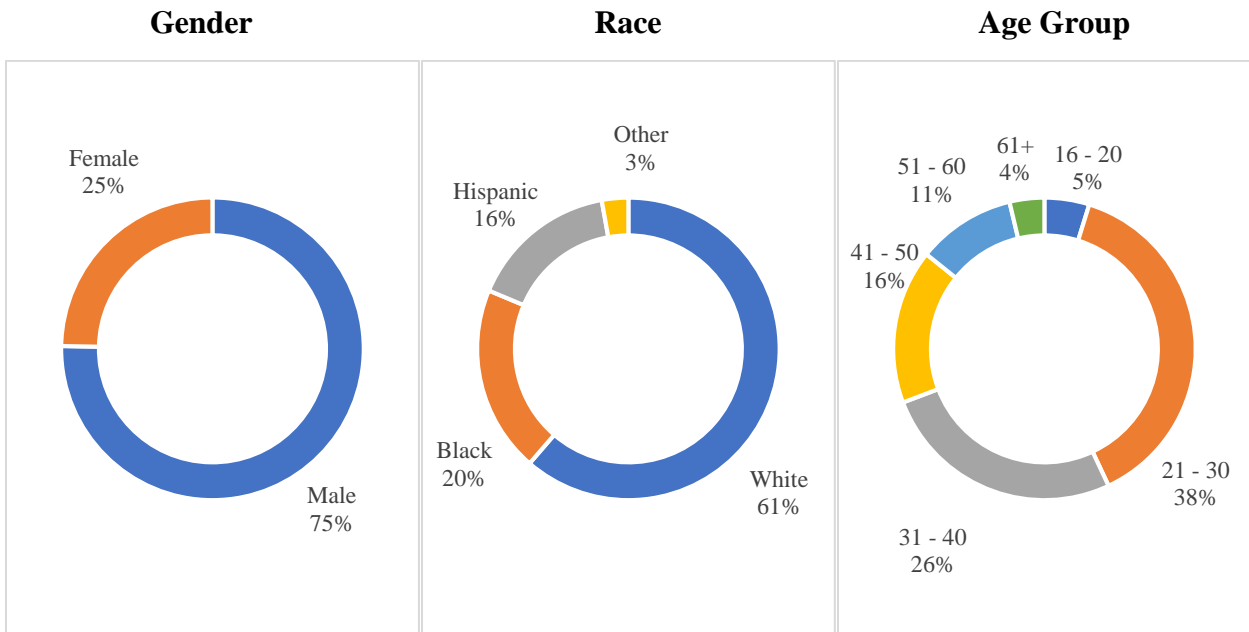
The number of DUI arrests²⁶ in Illinois has declined since 2008 (*Figure 1*). In 2017, DUI arrests dropped to their lowest level of any year (32,450) in the available data, demonstrating a 41-percent decrease from peak level in 2006. In 2017, 75 percent of those arrested for DUI in Illinois were male, 65 percent of all arrestees were white, and 39 percent were between the ages of 21 and 30 (*Figure 2*).

Figure 1
DUI Arrests in Illinois, 2000 – 2017



Source: ICJIA analysis of Illinois Criminal History Record Information

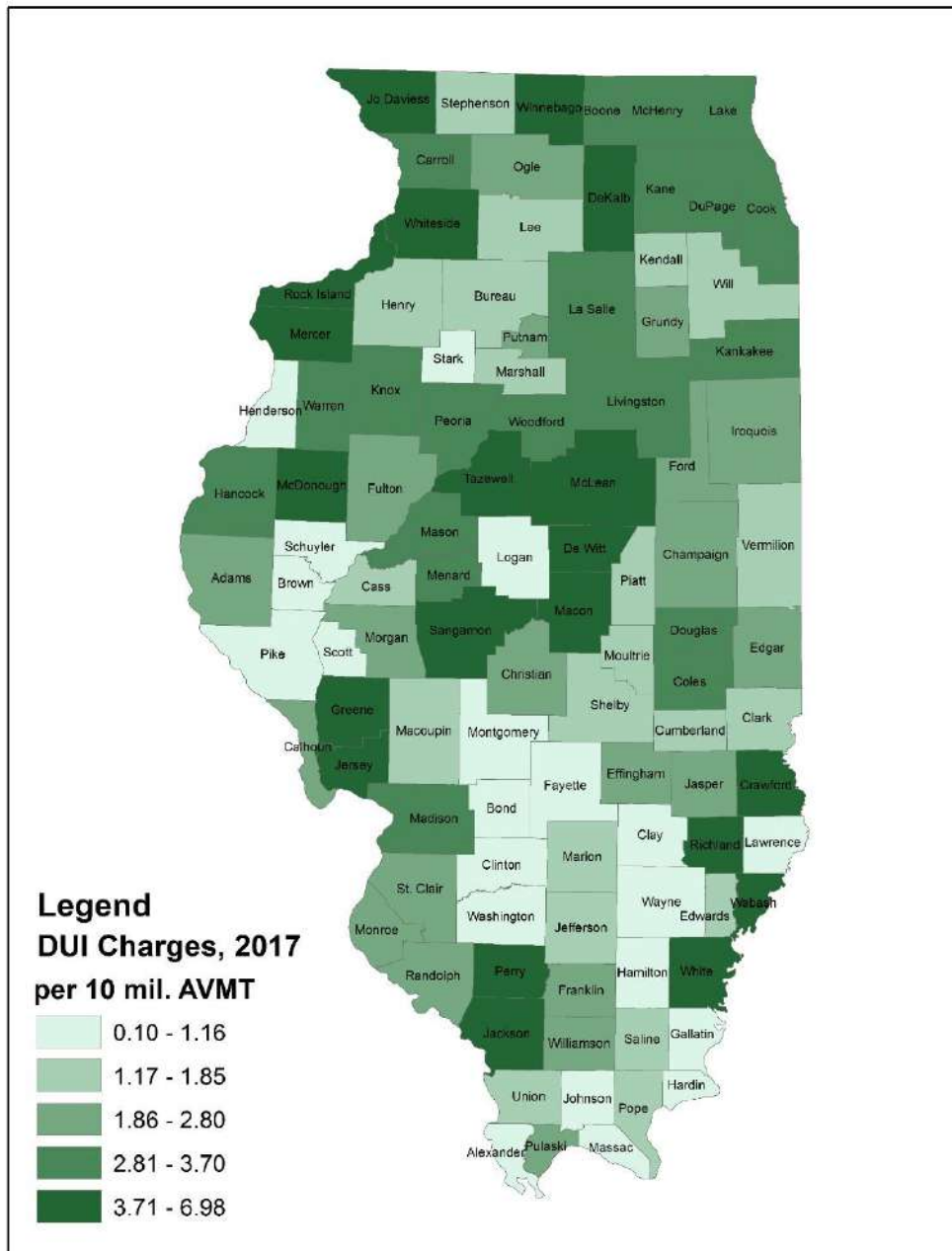
Figure 2
DUI Arrest Demographics in Illinois, 2017



Source: ICJIA analysis of Illinois Criminal History Record Information, N=32,005

Map 1 presents 2017 DUI arrest rates per 10 million annual vehicle miles traveled by county.²⁷ This measure accounts for actual driving behaviors instead of simply where individuals reside. Considerable variation is seen between counties, with little evidence of patterns based on region or rurality. In total, 69 percent of DUI arrests in 2017 involved an individual with a BAC level between 0.10 and 0.19 and 23 percent involved a BAC level of 0.20 or greater.²⁸

Map 1
Rate of DUI Arrests by County, 2017



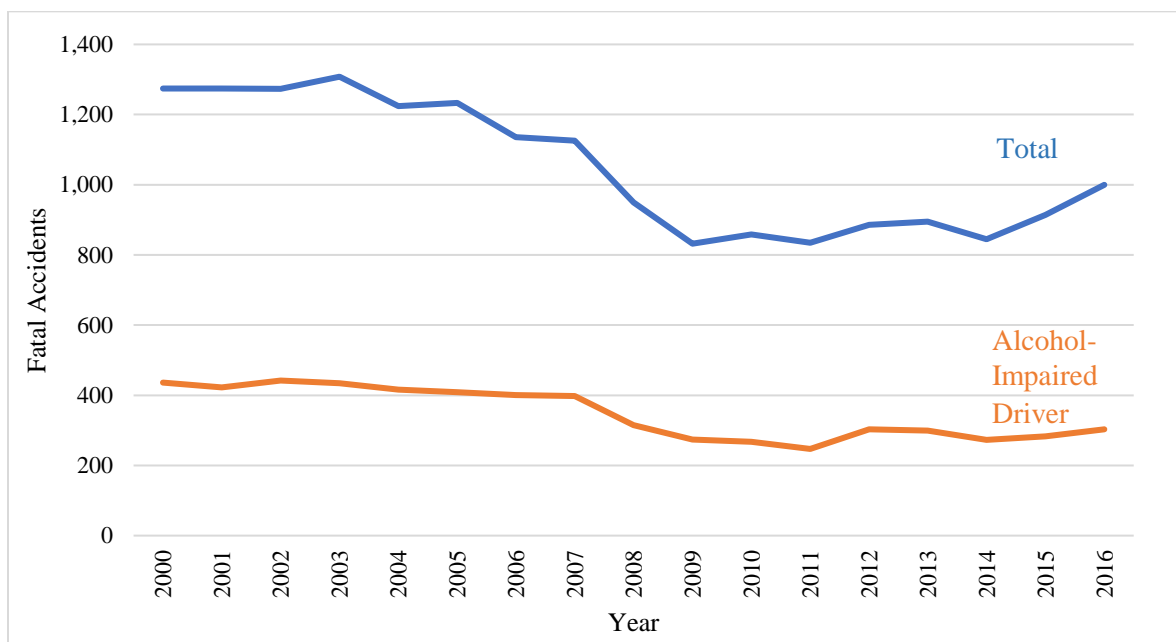
Source: ICJIA analysis of Illinois Criminal History Record Information, Illinois Department of Transportation
Note: AVMT is annual vehicle miles traveled.

Using data to measure alcohol-impaired driving. In a survey of alcohol-impaired driving behavior, Illinois residents self-reported a rate of 475 impaired driving incidents per 1,000 population.²⁹ This rate is markedly higher than the rate of individuals arrested for DUIs in Illinois (3.44 arrests per 1,000 population), suggesting most impaired driving goes undetected. The self-reported rate was lower than that of other midwestern states, with the exception of Indiana (432), as well as below the national average (505). However, comparisons should be interpreted with caution because many factors can contribute to changes in driving behaviors over time and across states, such as gas prices and availability of public transportation. Further, due to the nature of these data, arrests analyzed here may include arrest charges for driving under the influence of impairing substances other than alcohol.

Alcohol-Related Fatal Accidents

The National Highway Traffic Safety Administration’s Fatal Accident Reporting System (FARS) database includes data on all fatal motor vehicle accidents, with specific information on those that involve alcohol.³⁰ In Illinois, the number of fatal accidents decreased between 2000 and 2009, but increased from 2009 to 2016 (*Figure 3*). Fatal accidents involving an alcohol-impaired driver (BAC greater than 0.08 g/dL) followed a similar but less pronounced decline; however, they did not demonstrate a recent increase, as all fatal accidents did.

Figure 3
Fatal Motor Vehicle Accidents in Illinois, 2000-2016

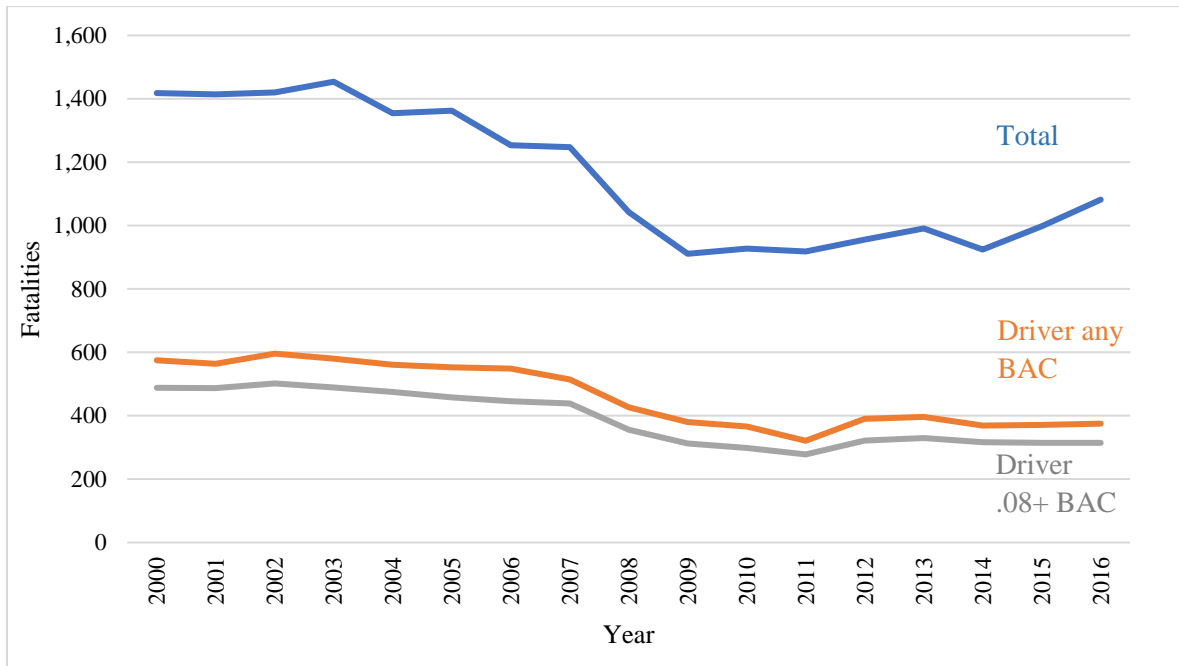


Source: National Highway Traffic Safety Administration, FARS data tables

The total number of accident-related fatalities follows a similar pattern to that of total fatal accidents, but is slightly higher in number, as some accidents have multiple fatalities (*Figure 4*).

The FARS database provides information on all fatalities from accidents that are alcohol-involved (i.e. a driver has any level of BAC greater than zero), as well as those with drivers who have a BAC over the legal limit. A large proportion of alcohol-involved fatalities are a result of accidents involving an impaired driver with a BAC of over 0.08 (*Figure 4*).

Figure 4
Fatalities from Motor Vehicle Accidents in Illinois, 2000-2016



Source: National Highway Traffic Safety Administration, FARS data tables
 Note: BAC is blood alcohol content.

Illinois DUI Laws and Penalties

Before an individual is sentenced for a DUI offense, they must complete an evaluation of their alcohol/drug use and driving behaviors conducted by a licensed provider.³¹ Based on the findings of the evaluation, the provider will make a recommendation of risk level to the court and the secretary of state. The risk levels (minimal, moderate, significant, and high) determine an appropriate amount of education and/or treatment to be recommended in the individual's sentence.

In Illinois, DUI may be cited as a Class A misdemeanor or a Class 4, 2, 1, or X felony; felony charges result in an Aggravated DUI classification.³² Factors that impact sentencing include:

- Previous DUI convictions.
 - First conviction (Class A misdemeanor) requires a license revocation for at least one year.

- Second conviction (Class A misdemeanor) results in license revocation for at least five years.
 - Third conviction (Class 2 felony) requires a loss of license for at least 10 years.
 - Fourth conviction (Class 2 felony), fifth conviction (Class 1 felony), or sixth/subsequent convictions (Class X felony) result in loss of driving privileges for life.
- Driver's BAC.
 - Driver BAC of over 0.16 results in larger fines, more hours of community service, and/or more days in jail, depending on number of prior convictions.
- Driver's age.
 - If, at the time of their first offense, the driver is under the age of 21, the license suspension period will be at least two years.
- Children under 16 in the car.
 - If the offense occurs while a child under the age of 16 is in the car, additional fines, community service in a program benefitting children, and/or imprisonment may be required, based on number of prior convictions.
 - Upon the driver's second DUI conviction or any subsequent convictions while transporting a child under age 16, the offense will be at minimum a Class 4 felony (Aggravated DUI).
 - Drivers responsible for DUI accidents resulting in bodily harm to the child will be charged with Aggravated DUI and will result in additional fines and community service in programs that benefit children. (The first conviction will be a Class 4 felony; the second conviction and any subsequent convictions will be a Class 2 felony.)
- Driving the wrong way on a one-way road.³³
 - If at the time of the offense, the driver is driving the wrong way on a one-way road, the court is to consider this as an aggravating factor in sentencing in favor of imposing a term of imprisonment or a more severe sentence. [730 ILCS 5/5-5-3.2(a)(31)]

If impaired driving results in the death of an individual, the driver may be charged with reckless homicide. If convicted, the driver will serve at least two years in prison. At the end of 2018, 1,194 individuals were in Illinois prisons for a DUI-related offense.³⁴ The Office of the Illinois Secretary of State estimates the average cost to an individual convicted of a DUI is \$18,030. According to [Mothers Against Drunk Driving \(MADD\)](#), Illinois has the one of the highest ratings for most comprehensive drunk driving laws.³⁵

A judge can grant a defendant court supervision one time only, which will require the individual to comply with certain conditions, such as participation in a victim-impact panel or alcohol/drug

treatment, and judgment will be deferred.³⁶ To impose this type of sentence, the judge must make the following determinations:

- 1) The defendant is not likely to commit further crimes.
- 2) The defendant and the public will be best served if the defendant were not to receive a criminal record.
- 3) The sentence is in the best interests of justice and more appropriate than a sentence otherwise permitted under the code. [730 ILCS 5/5-6-1(c)]

If an individual successfully completes court supervision, the judge will dismiss the charges but the record of the arrest and court supervision cannot be expunged or sealed [730 ILCS 5/5-6-3.1(e)(f)]. A review of available 2017 dispositions in Illinois showed 63 percent of cases received court supervision.³⁷

Some penalties are levied under the authority of the Illinois Department of Motor Vehicles/Secretary of State and not the justice system. Administrative license suspensions allow the arresting officer to immediately suspend a suspected impaired driver's license at the time of arrest. This increases the certainty and swiftness of punishment.³⁸ Some studies have shown an association between administrative license suspensions and a decline in alcohol-related traffic fatalities.³⁹ However, administrative sanctions lack the same level of compulsory power as criminal sanctions. For example, utilization of alcohol ignition interlock devices is significantly higher when ordered by a judge as a condition of probation, compared to administrative programs that offer a shortened license suspension if the individual agrees to install an interlock device on their vehicle.⁴⁰

Interventions to Reduce Alcohol-Impaired Driving

Efforts to combat alcohol-impaired driving include preventative strategies and enforcement programs. Responses to alcohol-impaired driving offenses may be rehabilitative or aimed at incapacitation (*see text box*). There are discrepant findings on which tenets of deterrence are most influential on alcohol-impaired driving. Many studies have found that severity is not significantly related to reducing alcohol-impaired driving, but others have demonstrated deterrent effects from longer jail sentences and increased fine amounts.⁴¹ Some research has found increased perception of likely apprehension is associated with decreased self-reported alcohol-impaired driving, whereas perception of increased sanctions generally is not significantly associated with self-reported impaired driving.⁴² Another study found that swift punishment is more impactful than severity in deterring alcohol-impaired driving.⁴³

Some strategies are specifically aimed at repeat DUI offenders. An individual will drive drunk an average of 80 times before their first arrest for impaired driving.⁴⁴ Research indicates repeat offenders make up 20 to 35 percent of DUI offenders.⁴⁵ In addition, up to 1,000 motor vehicle fatalities annually are caused by individuals who were convicted of a DUI in the prior three years.⁴⁶ Some researchers suggest sanctions for repeat offenders should be incapacitation-based rather than deterrence-focused.⁴⁷ Others hold that those who repeatedly drive impaired will benefit more from rehabilitative approaches, such as substance use disorder treatment.⁴⁸

The following are descriptions of programming and existing research on interventions to prevent alcohol-impaired driving and sanctions for individuals who are convicted of impaired driving. Some strategies and policies (e.g. alcohol taxes, sales restrictions) aim to reduce the accessibility of alcohol, thereby reducing alcohol-impaired driving; however, such strategies are beyond the scope of this article.⁴⁹ The following programs are employed in some form throughout Illinois.

Responses to DUI: Theoretical Frameworks

General deterrence theory includes measures aimed to deter a broad group of potential offenders; it is exemplified by strategies to reduce DUI that require high levels of publicity to influence a large number of individuals, such as sobriety checkpoints and severe penalties for first-time offenders.⁵⁰

Specific deterrence is focused on a targeted group, aiming to prevent repeat offenders; it is enacted through intensive supervision/monitoring and frequent drug testing. Deterrence can be brought about through formal means (e.g. criminal justice system) or informal means (e.g. social norms).

Social control theory holds that individuals' behavior can be regulated by means other than law.⁵¹ With respect to DUI, it is exerted through widespread media campaigns that promote the potential dangers of alcohol-impaired driving, often taking a moralistic approach.⁵²

Rational choice theory suggests that individuals weigh the costs and benefits of violating the law. When considering alcohol-impaired driving, an individual may conclude that the benefits (e.g. not paying the cost of alternative transportation) outweigh the costs, or that the costs are sufficiently unlikely (e.g. apprehension, motor vehicle accident). The effects of alcohol may lead an individual to downplay the risks and impulsively seek the benefits more so than if they were soberly considering the choice.⁵³

Punitive measures for impaired driving may be oriented toward **rehabilitation or incapacitation**. Rehabilitative approaches posit that individuals can learn more prosocial behaviors and help themselves change, similar to a theory of self-efficacy;⁵⁴ examples may include substance use disorder treatment or educational programming. Incapacitation aims to prevent individuals from being able to engage in further violations of the law; this can be seen in license suspension/revocation, vehicle impoundment/surrender, or ignition interlock devices.⁵⁵

Alcohol-impaired driving laws can be construed as a **harm-reduction approach** because they allow for the consumption of some alcohol but employ a limit at which it is deemed dangerous.⁵⁶

Sobriety Checkpoints

In this strategy to enforce impaired driving laws, officers will set up a checkpoint where all drivers are stopped, allowing officers to briefly assess whether the driver is thought to be impaired. A nationwide survey found that 73 percent of state patrol agencies and 42 percent of local law enforcement agencies conduct sobriety checkpoints.⁵⁷ All counties in Illinois conduct sobriety checkpoints once or twice per month, on average.⁵⁸ To most effectively deter impaired driving, sobriety checkpoints should be highly visible and well publicized.⁵⁹ By raising

awareness among the public of an increased risk of apprehension, the general deterrent effect is more pronounced and impaired driving is reduced.⁶⁰

When stopped at a sobriety checkpoint, an officer must have reason to suspect the individual may be impaired to require a breathalyzer test.⁶¹ However, one study found that 62 percent of drivers with a BAC above the legal limit were not breathalyzed.⁶² Some law enforcement officials are critical of checkpoints because they result in few arrests.⁶³ Sobriety checkpoints are effective in reducing motor vehicle accidents, with a meta-analysis finding median decreases of 20 percent for accidents with injuries and 24 percent for accidents resulting in property damage. A lack of resources was cited as a reason that departments do not conduct sobriety checkpoints more frequently; however, research demonstrates checkpoints operated by a small number of officers can be effective in reducing impaired driving.⁶⁴

DUI Courts

DUI courts are problem-solving courts, modeled after drug courts; the judge, prosecution, defense, and other stakeholders (e.g. treatment providers) collaborate as a team to provide participants with services to reduce recidivism.⁶⁵ Forty-six states have at least one problem-solving court that accepts DUI cases.⁶⁶ Some jurisdictions have dockets solely dedicated to DUI, while others have expanded drug courts to include DUI cases.⁶⁷ DUI courts may be targeted to individuals who already have one or more convictions for a DUI.⁶⁸ For example, in Illinois, Ogle County operates a DUI specialty court and McHenry County has received grant funding to begin a DUI court in 2019.⁶⁹

Findings on the efficacy of DUI courts are mixed. In multiple studies of DUI courts, participants had significantly fewer rearrests than comparison groups.⁷⁰ However, other program evaluations found no significant differences in recidivism for those who participate and those who receive standard criminal justice processing.⁷¹ DUI court participation is also associated with significantly shorter jail stays.⁷² In one study, DUI court participants who recidivated went longer without rearrest than those in a comparison group.⁷³ More research is needed to determine if and how DUI courts can consistently reduce recidivism.

Ignition Interlock Devices

Alcohol ignition interlock machines require drivers to take a breath alcohol test to prove they have a zero BAC before starting their vehicles. Drivers are then tested at random points throughout the trip.⁷⁴ In Illinois, the devices must employ a camera to capture an image of the individual as they provide their breath sample.⁷⁵ More than 200,000 interlock devices were in operation in 2009 in the United States; however, this is a small proportion of DUI offenders and research suggests individuals prefer license suspension to interlock installation.⁷⁶

In Illinois, an average of 10,000 individuals use ignition interlock devices each year.⁷⁷ The estimated monthly cost of an interlock device in Illinois is about \$110.⁷⁸ Individuals with an interlock installed can be issued a monitoring device driving permit that allows all driving (first-time offenders only) or a restricted driving permit that allows driving in limited circumstances

(e.g. driving to work).⁷⁹ These regulations have been found to reduce the likelihood of an individual driving after drinking.⁸⁰

These devices can reduce repeat DUI offending by as much as 65 percent.⁸¹ However, some studies have found that once the device is removed, the DUI recidivism rate returns to its prior level.⁸² Sanctions involving ignition interlocks are more effective in reducing recidivism than license suspension.⁸³ Interlock programs also allow the individual to continue to hold employment more easily, which increases their likelihood of being able to pay for the cost of the device.⁸⁴ Additional technologies (e.g. GPS tracking, tampering alerts) are being integrated into new interlock devices and use of the devices continues to grow.⁸⁵

Intensive Monitoring Programs

Intensive Monitoring Programs are similar to intensive supervision probation and require frequent contacts between individuals and law enforcement, court staff, or community corrections personnel and often include alcohol/drug testing. These types of monitoring programs can be scaled to the appropriate level of supervision for participants' needs/progress, with good performance resulting in reduced sanctions or shortened durations of monitoring. Substance use disorder treatment may not be a formal requirement of supervision, but may be optionally available to participants.⁸⁶

An evaluation of three intensive supervision programs for DUI offenders showed that all three were associated with reductions in DUI rearrests.⁸⁷ Findings on alcohol-involved motor vehicle accidents were mixed.⁸⁸ An analysis of costs and savings found intensive monitoring programs operate at a lower cost to the state compared to DUI court programs.⁸⁹ The Lake County Division of Adult Probation Services' [specialized DUI unit](#) is one example of an intensive monitoring program in Illinois.

24/7 Programs. South Dakota's 24/7 Sobriety Program is an intensive monitoring program that was rated as "promising" by [crimesolutions.gov](#). This program requires those arrested for or convicted of an alcohol-related offense to abstain from alcohol and take breathalyzer tests multiple times per day.⁹⁰ Some programs make use of additional methods of detection, such as constant alcohol monitoring devices (e.g. SCRAM bracelet) or dermal patches that can detect drugs through an individual's sweat.⁹¹ If testing positive, individuals are sanctioned and immediately spend one to two nights in jail.⁹² Multiple evaluations have found participation in a 24/7 program to be associated with decreased DUI recidivism.⁹³ These programs have expanded to many states, offering opportunities for continued research.⁹⁴

Public Service Announcements/Media Campaigns

Media campaigns aim to make individuals aware of the dangers of impaired driving. These strategies typically either focus on the legal consequences of impaired driving, or the social norms inhibiting impaired driving.⁹⁵ The "[Buzzed Driving is Drunk Driving](#)" campaign is a social norm-focused campaign that emphasizes the danger of consuming moderate amounts of alcohol before driving. However, there is relatively little evidence on the effectiveness of such campaigns; they are challenging to empirically evaluate due to the very broad target

population.⁹⁶ Following a systematic review of the research on media campaigns to decrease alcohol impaired driving, researchers were unable to conclude whether the strategy decreased alcohol-related motor vehicle fatalities.⁹⁷

Media campaigns can also be employed in conjunction with heightened enforcement efforts. In Illinois and around the country, a twice yearly “[Drive Sober or Get Pulled Over](#)” campaign is implemented around Labor Day and Christmas/New Year’s Eve.⁹⁸ Multiple evaluations, including that of the Illinois program, found the estimated benefits of the campaigns surpassed the costs associated with developing and airing the messaging.⁹⁹

Media campaigns can be used to promote the use of a designated driver; this type of campaign calls for a specific action, as opposed to simply raising awareness.¹⁰⁰ Campaigns of this nature can take a marketing approach by emphasizing the value of a designated driver to a consumer’s self-interest (e.g. designated drivers allow others to enjoy themselves and not worry about impaired driving consequences).¹⁰¹ However, the findings of empirical research studies on designated driver campaigns have been mixed. Some have found a significant increase in self-reported use of a designated driver, while others found no significant change in self-reported impaired driving or riding with an impaired driver.¹⁰² Critics hold that promoting designated drivers may lead to excessive consumption by those not serving as a designated driver.¹⁰³

Impact of Ridesharing on Impaired Driving

The introduction and expansion of rideshare services such as Uber and Lyft provide individuals with another transportation option to avoid drinking and driving. The expansion of ridesharing differs across counties and regions due in part to varying regulations and ordinances at the local level. These companies keep much of their usage data private; to gauge impact, many researchers have utilized the initial expansion of ridesharing into a city or county as a measure and make comparisons to areas that do not yet have rideshare services. Certain factors (e.g. age, socioeconomic status) may influence an individual’s likelihood to utilize a rideshare service, therefore the impact on impaired driving behavior may be limited to specific groups.

A 2015 report published by Uber and MADD noted a 10-percent decrease in DUI arrests after Uber began operating in Seattle.¹⁰⁴ In a national study, DUI arrests decreased following the initial implementation of ridesharing but the reduction did not continue over time.¹⁰⁵ Areas with less usage of public transportation experienced a greater reduction in DUIs after the implementation of ridesharing services.¹⁰⁶ A study of New York City found that Uber’s arrival was associated with a 25- to 35-percent decrease in alcohol-related motor vehicle collisions.¹⁰⁷

Findings are mixed on the impact of ridesharing on alcohol-related motor vehicle fatalities. Multiple empirical studies have found ridesharing to reduce alcohol-related motor vehicle fatalities and that the longer the service has been in place, the greater the impact it will have on reducing fatalities.¹⁰⁸ A study of all U.S. cities with a population of 100,000 or more found that introduction of rideshare services is associated with a decrease of approximately 10 percent in alcohol-related motor vehicle fatalities.¹⁰⁹ However, others have noted cities that were early adopters of ridesharing were already experiencing declines in alcohol-related motor vehicle fatalities prior to introduction of ridesharing.¹¹⁰ In another study of metropolitan areas across the country, Uber was not significantly associated with a change in any traffic fatalities, including alcohol-related fatalities.¹¹¹

Conclusion

States employ strategies to prevent impaired driving and enforce existing laws, while others are employed to sanction and reduce repeat offending. Despite the high costs of alcohol-impaired driving, the scope and persistence of the issue make it difficult for law enforcement to entirely eradicate the problem. In prior decades, much progress was made in reducing alcohol-related motor vehicle fatalities; however, recently that progress has levelled off.¹¹² This progress may have been fueled in part by factors such as new car safety features (e.g. automatic braking, lane departure warnings); distracted driving due to the proliferation of smart phones and other technology may have the opposite effect.¹¹³ Many policies and programs have been enacted to prevent alcohol-impaired driving and enforce existing DUI laws.¹¹⁴ More rigorous evaluation research is needed on the existing efforts to combat alcohol-impaired driving.¹¹⁵

Drug-impaired driving has also become an issue of greater public concern in recent years and fewer interventions specifically target drug-impaired driving.¹¹⁶ As the legalization of marijuana for medical and recreational purposes continues to expand and the opioid crisis remains persistent, further research and strategy to address drug-impaired driving will be crucial. Law enforcement and researchers would benefit from collaboration to create a more uniform assessment process for drug-impaired driving, whether through appraisal by an officer in the field or through improved chemical testing processes.¹¹⁷ Additionally, drug-impaired driving should not be obscured by the driver's consumption of alcohol; the combined effects of alcohol and drugs on driver impairment should be more thoroughly examined and development of interventions targeted at this problem should continue.¹¹⁸

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¹ Note: The sample was comprised of the largest cities where Uber operates and was representative of the general population in those cities.

Uber Technologies, Inc. & Mothers Against Drunk Driving. (2015). *More options. Shifting mindsets. Driving better choices*. Retrieved from <https://uberblogapi.10upcdn.com/wp-content/uploads/2015/01/UberMADD-Report.pdf>

² Buckley, L., Chapman, R. L., & Lewis, I. (2016). A systematic review of intervening to prevent driving while intoxicated: The problem of driving while intoxicated (DWI). *Substance Use & Misuse*, 51(1), 104-112.

³ Sunshine, J. E., Dwyer-Lindgren, L., Chen, A., Sharar, S. R., Palmisano, E. B., Bulger, E. M., & Mokdad, A. H. (2018). Alcohol-impaired driving in US counties, 2002–2012. *Population Health Metrics*, 16(1), 2.

⁴ Note: An individual with a blood alcohol content (BAC) above 0.08 is statutorily determined to be “incapable of driving safely” and can be found guilty of driving under the influence [625 ILCS 5/11-501 (a)(1)]. Additionally, if an individual has consumed any amount of any substance listed in the Illinois Controlled Substances Act, Intoxicating Compounds Act, or Methamphetamine Control and Community Protection Act they are “incapable of driving safely” and can be found guilty of a DUI [625 ILCS 5/11-501 (a)(6)].

⁵ American Addiction Centers. (2017). *The financial cost of a DUI*. Retrieved from <https://www.alcohol.org/dui/financial-cost/>

⁶ Office of the Illinois Secretary of State. (2018). *Illinois 2019 DUI fact book*. Retrieved from https://www.cyberdriveillinois.com/publications/pdf_publications/dsd_a118.pdf

⁷ Office of the Illinois Secretary of State. (2018). *Illinois 2019 DUI fact book*. Retrieved from https://www.cyberdriveillinois.com/publications/pdf_publications/dsd_a118.pdf

⁸ Jones, A. W. (1996). Measuring alcohol in blood and breath for forensic purposes-A historical review. *Forensic Science Review*, 8, 13-44.

⁹ Note: This suspension will take effect 45 days after issuance. Office of the Illinois Secretary of State. (2018). *Illinois 2019 DUI fact book*. Retrieved from https://www.cyberdriveillinois.com/publications/pdf_publications/dsd_a118.pdf

¹⁰ Office of the Illinois Secretary of State. (2018). *Illinois 2019 DUI fact book*. Retrieved from https://www.cyberdriveillinois.com/publications/pdf_publications/dsd_a118.pdf

¹¹ Office of the Illinois Secretary of State. (2018). *Illinois 2019 DUI fact book*. Retrieved from https://www.cyberdriveillinois.com/publications/pdf_publications/dsd_a118.pdf

¹² Note: Officers cannot order medical personnel to carry out alcohol or drug testing, or draw blood.

Office of the Illinois Secretary of State. (2018). *Illinois 2019 DUI fact book*. Retrieved from https://www.cyberdriveillinois.com/publications/pdf_publications/dsd_a118.pdf

¹³ Hingson, R., & Winter, M. (2003). Epidemiology and consequences of drinking and driving. *Alcohol Research and Health*, 27(1), 63-78.

¹⁴ Compton, R., Vegega, M., & Smither, D. (2009). *Drug impaired driving: Understanding the problem and ways to reduce it (A report to Congress)*. Washington DC: National Highway Traffic Safety Administration Office of Behavioral Safety Research.

¹⁵ Brady, J. E., & Li, G. (2014). Trends in alcohol and other drugs detected in fatally injured drivers in the United States, 1999–2010. *American Journal of Epidemiology*, 179(6), 692-699.

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- ¹⁶ Jones, A. W. (1996). Measuring alcohol in blood and breath for forensic purposes-A historical review. *Forensic Science Review*, 8, 13-44.
- ¹⁷ Shults, R. A., Elder, R. W., Sleet, D. A., Nichols, J. L., Alao, M. O., Carande-Kulis, V. G., ... & Task Force on Community Preventive Services. (2001). Reviews of evidence regarding interventions to reduce alcohol-impaired driving. *American Journal of Preventive Medicine*, 21(4), 66-88.
- ¹⁸ Wogan, J. B. (2018). The Deadliest Drug. *Governing*. Retrieved from <http://www.governing.com/topics/health-human-services/gov-alcohol-abuse.html>
- ¹⁹ Wogan, J. B. (2018). The Deadliest Drug. *Governing*. Retrieved from <http://www.governing.com/topics/health-human-services/gov-alcohol-abuse.html>
- ²⁰ Fell, J. C., Beirness, D. J., Voas, R. B., Smith, G. S., Jonah, B., Maxwell, J. C., ... & Hedlund, J. (2016). Can progress in reducing alcohol-impaired driving fatalities be resumed? *Traffic Injury Prevention*, 17(8), 771-781.;
- Beirness, D. J., & Beasley, E. E. (2014). An evaluation of immediate roadside prohibitions for drinking drivers in British Columbia: findings from roadside surveys. *Traffic Injury Prevention*, 15(3), 228-233.
- ²¹ Office of the Illinois Secretary of State. (2018). *Illinois 2019 DUI fact book*. Retrieved from https://www.cyberdriveillinois.com/publications/pdf_publications/dsd_a118.pdf
- ²² Dugosh, K. L., Festinger, D. S., & Marlowe, D. B. (2013). Moving beyond BAC in DUI: Identifying who is at risk of recidivating. *Criminology & Public Policy*, 12(2), 181-193.
- ²³ Note: In the DSM-5, alcohol use disorder is defined by the presence of two or more symptoms in the past year, such as “Spent a lot of time drinking” or “Continued to drink even though it was causing trouble with your family or friends.” For a full list of symptoms see: [NIAAA: Alcohol Use Disorder](#).
- Wieczorek, W. F., Miller, B. A., & Nochajski, T. H. (1992). The limited utility of BAC for identifying alcohol-related problems among DWI offenders. *Journal of Studies on Alcohol*, 53(5), 415-419.
- ²⁴ American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (5th ed.)*. Washington, DC: Author.
- ²⁵ Dugosh, K. L., Festinger, D. S., & Marlowe, D. B. (2013). Moving beyond BAC in DUI: Identifying who is at risk of recidivating. *Criminology & Public Policy*, 12(2), 181-193.
- ²⁶ Note: The term “arrests” here refers to arrest charges; not all arrest charges are individual arrest incidents.
- ²⁷ Illinois Department of Transportation. (2018). *2017 Illinois travel statistics*. Retrieved from <http://www.idot.illinois.gov/Assets/uploads/files/Transportation-System/Reports/OP&P/Travel-Stats/2017 ITS.pdf>
- ²⁸ Office of the Illinois Secretary of State. (2018). *Illinois 2019 DUI fact book*. Retrieved from https://www.cyberdriveillinois.com/publications/pdf_publications/dsd_a118.pdf

²⁹ Jewett, A., Shults, R. A., Banerjee, T., and Bergen, G. (2015). Alcohol-impaired driving among adults-United States, 2012. *Morbidity and Mortality Weekly Report (MMWR)*, 64(30); 814-817. Atlanta, GA: Center for Disease Control and Prevention.

³⁰ Note: The FARS database reports on vehicle occupants, motorcyclists, and nonmotorists (e.g. pedestrians, cyclists) involved in fatal accidents. See <https://www-fars.nhtsa.dot.gov/People/PeopleAllVictims.aspx> for more information.

³¹ State of Illinois Department of Human Services Division of Alcoholism and Substance Abuse. (2014). *DUI processes and evaluations*. Chicago, IL: Author. Retrieved from <https://www.dhs.state.il.us/OneNetLibrary/27897/documents/Brochures/4499.pdf>

³² Office of the Illinois Secretary of State. (2018). *Illinois 2019 DUI fact book*. Retrieved from https://www.cyberdriveillinois.com/publications/pdf_publications/dsd_a118.pdf

³³ Office of the Illinois Secretary of State. (2018). *Illinois 2019 DUI fact book*. Retrieved from https://www.cyberdriveillinois.com/publications/pdf_publications/dsd_a118.pdf

³⁴ Illinois Department of Corrections. (2019). *Prison population data sets*. Retrieved from <https://www2.illinois.gov/idoc/reportsandstatistics/Pages/Prison-Population-Data-Sets.aspx>

³⁵ Mothers Against Drunk Driving (MADD). (2018). *2018 Report to the Nation*. Irving, TX: Author. Retrieved from <https://www.madd.org/state-statistics/>

³⁶ Office of the Illinois Secretary of State. (2018). *Illinois 2019 DUI fact book*. Retrieved from https://www.cyberdriveillinois.com/publications/pdf_publications/dsd_a118.pdf

³⁷ Office of the Illinois Secretary of State. (2018). *Illinois 2019 DUI fact book*. Retrieved from https://www.cyberdriveillinois.com/publications/pdf_publications/dsd_a118.pdf

³⁸ Wagenaar, A. C., & Maldonado-Molina, M. M. (2007). Effects of drivers' license suspension policies on alcohol-related crash involvement: Long-term follow-up in forty-six states. *Alcoholism: Clinical and Experimental Research*, 31(8), 1399-1406.

³⁹ Klein, T. M. (1989). *Changes in alcohol-involved fatal crashes associated with tougher state alcohol legislation* (No. DOT-HS-807-551). United States: National Highway Traffic Safety Administration.

⁴⁰ Fell, J. C., Beirness, D. J., Voas, R. B., Smith, G. S., Jonah, B., Maxwell, J. C., ... & Hedlund, J. (2016). Can progress in reducing alcohol-impaired driving fatalities be resumed?. *Traffic Injury Prevention*, 17(8), 771-781.

⁴¹ Mann, R. E., Vingilis, E. R., Gavin, D., Adlaf, E., & Anglin, L. (1991). Sentence severity and the drinking driver: Relationships with traffic safety outcome. *Accident Analysis & Prevention*, 23(6), 483-491.;

Ross, H. L., McCleary, R., & LaFree, G. (1990). Can mandatory jail laws deter drunk driving--The Arizona case. *Journal of Criminal Law & Criminology*, 81, 156.;

Weinrath, M., & Gartrell, J. (2001). Specific deterrence and sentence length: The case of drunk drivers. *Journal of Contemporary Criminal Justice*, 17(2), 105-122.;

Yu, J. (1994). Punishment celerity and severity: Testing a specific deterrence model on drunk driving recidivism. *Journal of Criminal Justice*, 22(4), 355-366.

⁴² Note: Researchers found a small negative significant relationship between perception of longer jail time following a DWI conviction and decreased self-reported alcohol-impaired driving.

Sloan, F. A., McCutchan, S. A., & Eldred, L. M. (2017). Alcohol-impaired driving and perceived risks of legal consequences. *Alcoholism: Clinical and Experimental Research*, 41(2), 432-442.

⁴³ Wagenaar, A. C., & Maldonado-Molina, M. M. (2007). Effects of drivers' license suspension policies on alcohol-related crash involvement: Long-term follow-up in forty-six states. *Alcoholism: Clinical and Experimental Research*, 31(8), 1399-1406.

⁴⁴ Mothers Against Drunk Driving. (n.d.) *Statistics: Fight back against misinformation*. Retrieved from <https://www.madd.org/statistics/>

⁴⁵ Dugosh, K. L., Festinger, D. S., & Marlowe, D. B. (2013). Moving beyond BAC in DUI: Identifying who is at risk of recidivating. *Criminology & Public Policy*, 12(2), 181-193.

⁴⁶ Voas, R. B., DuPont, R. L., Talpins, S. K., & Shea, C. L. (2011). Towards a national model for managing impaired driving offenders. *Addiction*, 106(7), 1221-1227.

⁴⁷ Jacobs, J. B. (1990). Toward a jurisprudence of drunk driving recidivism. *Alcohol, Drugs & Driving*, 6(3-4), 205-211.;

Fell, J. C., Voas, R. B., & Lacey, J. H. (n.d.). *Guidelines for sentencing DUI offenders in the United States*. Calverton, MD: Pacific Institute for Research and Evaluation. Retrieved from <http://acrs.org.au/files/arsrpe/RS07023.pdf>

⁴⁸ Kunitz, S. J., Woodall, W. G., Zhao, H., Wheeler, D. R., Lillis, R., & Rogers, E. (2002). Rearrest rates after incarceration for DWI: A comparative study in a southwestern US county. *American Journal of Public Health*, 92(11), 1826-1831.;

Yu, J., Evans, P. C., & Clark, L. P. (2006). Alcohol addiction and perceived sanction risks: Deterring drinking drivers. *Journal of Criminal Justice*, 34(2), 165-174.

⁴⁹ Shults, R. A., Elder, R. W., Sleet, D. A., Nichols, J. L., Alao, M. O., Carande-Kulis, V. G., ... & Task Force on Community Preventive Services. (2001). Reviews of evidence regarding interventions to reduce alcohol-impaired driving. *American Journal of Preventive Medicine*, 21(4), 66-88.

⁵⁰ DeJong, W., & Hingson, R. (1998). Strategies to reduce driving under the influence of alcohol. *Annual Review of Public Health*, 19(1), 359-378.

⁵¹ Hirschi, T. (1969). *Causes of delinquency*. Berkeley, CA: University of California Press.

⁵² Elder, R. W., Voas, R., Beirness, D., Shults, R. A., Sleet, D. A., Nichols, J. L., ... & Task Force on Community Preventive Services. (2011). Effectiveness of ignition interlocks for preventing alcohol-impaired driving and alcohol-related crashes: A Community Guide systematic review. *American Journal of Preventive Medicine*, 40(3), 362-376.

⁵³ Fillmore, M. T., Blackburn, J. S., & Harrison, E. L. (2008). Acute disinhibiting effects of alcohol as a factor in risky driving behavior. *Drug and Alcohol Dependence*, 95(1-2), 97-106.

-
- ⁵⁴ Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist*, 37(2), 122.
- ⁵⁵ National Highway Traffic Safety Administration (NHTSA) & National Institute on Alcohol Abuse and Alcoholism. (2005). *A guide to sentencing DUI offenders (2nd edition) (DOT-HS-810-555)*. Washington, DC: NHTSA.
- ⁵⁶ Watson, T. M., & Mann, R. E. (2018). Harm reduction and drug-impaired driving: sharing the road?. *Drugs: Education, Prevention and Policy*, 25(2), 105-108.
- ⁵⁷ Note: For state patrol agencies that reported *not* conducting sobriety checkpoints, 11 of the 12 agencies were from states that prohibit the use of sobriety checkpoints by law.
- Erickson, D. J., Farbaksh, K., Toomey, T. L., Lenk, K. M., Jones-Webb, R., & Nelson, T. F. (2015). Enforcement of alcohol-impaired driving laws in the United States: A national survey of state and local agencies. *Traffic Injury Prevention*, 16(6), 533-539.
- ⁵⁸ Fell, J. C., Lacey, J. H., & Voas, R. B. (2004). Sobriety checkpoints: Evidence of effectiveness is strong, but use is limited. *Traffic Injury Prevention*, 5(3), 220-227.
- ⁵⁹ Fell, J. C., Beirness, D. J., Voas, R. B., Smith, G. S., Jonah, B., Maxwell, J. C., ... & Hedlund, J. (2016). Can progress in reducing alcohol-impaired driving fatalities be resumed? *Traffic Injury Prevention*, 17(8), 771-781.
- ⁶⁰ Voas, R. B., & Fell, J. C. (2011). Preventing impaired driving, opportunities and problems. *Alcohol Research & Health*, 34(2), 225.
- ⁶¹ Elder, R. W., Shults, R. A., Sleet, D. A., Nichols, J. L., Zaza, S., & Thompson, R. S. (2002). Effectiveness of sobriety checkpoints for reducing alcohol-involved crashes. *Traffic Injury Prevention*, 3(4), 266-274.
- ⁶² Wells, J. K., Preusser, D. F., & Williams, A. F. (1992). Enforcing alcohol-impaired driving and seat belt use laws, Binghamton, NY. *Journal of Safety Research*, 23(2), 63-71.
- ⁶³ Fell, J. C., Lacey, J. H., & Voas, R. B. (2004). Sobriety checkpoints: Evidence of effectiveness is strong, but use is limited. *Traffic Injury Prevention*, 5(3), 220-227.
- ⁶⁴ Voas, R. B., & Fell, J. C. (2011). Preventing impaired driving, opportunities and problems. *Alcohol Research & Health*, 34(2), 225.
- ⁶⁵ Fell, J. C., Tippetts, A. S., & Ciccel, J. D. (2011). An evaluation of three driving-under-the-influence courts in Georgia. *Annals of Advances in Automotive Medicine/Annual Scientific Conference*, 55, 301-312.
- ⁶⁶ Wogan, J. B. (2018). The Deadliest Drug. *Governing*. Retrieved from <http://www.governing.com/topics/health-human-services/gov-alcohol-abuse.html>
- ⁶⁷ National Drug Court Institute. (1999). *DWI/drug courts: Defining a national strategy*. USA: Author. Retrieved from https://www.maafirm.com/files/dwi_courts__national_strategy.pdf
- ⁶⁸ Cissner, A. B. (2009). *The drug court model and persistent DWI: An evaluation of the Erie and Niagara DWI/drug courts*. New York, NY: The Center for Court Innovation.

⁶⁹ Ogle DUI court receives court approval. (2018, August 9). *Oglecountynews.com*. Retrieved from <https://www.oglecountynews.com/2018/08/06/ogle-dui-court-receives-court-approval/a3dy08m/>;

Smith, K. (2018, October 15). McHenry County receives grant for specialty DUI court. *Northwest Herald*. Retrieved from <https://www.nwherald.com/2018/10/15/mchenry-county-receives-grant-for-specialty-dui-court/a8g447s/>

⁷⁰ Fuller, B., Carey, S. M., & Kissick, K. (2007). *Michigan DUI courts outcome evaluation: Final report*. Portland, OR: NPC Research. Retrieved from <https://www.jdsupra.com/post/documentViewer.aspx?fid=0a190288-8c91-4f62-a9e1-a9b03504220c>;

Fell, J. C., Tippetts, A. S., & Ciccel, J. D. (2011). An evaluation of three driving-under-the-influence courts in Georgia. *Annals of Advances in Automotive Medicine/Annual Scientific Conference*, 55, 301-312.

⁷¹ MacDonald, J. M., Morral, A. R., Raymond, B., & Eibner, C. (2007). The efficacy of the Rio Hondo DUI court: A 2-year field experiment. *Evaluation Review*, 31(1), 4-23.;

Miller, P. G., Curtis, A., Sønderlund, A., Day, A., & Droste, N. (2015). Effectiveness of interventions for convicted DUI offenders in reducing recidivism: A systematic review of the peer-reviewed scientific literature. *The American Journal of Drug and Alcohol Abuse*, 41(1), 16-29.

⁷² Guerin, P., & Pitts, W. J. (2002). *Evaluation of the Bernalillo County metropolitan DWI/drug court (Final report)*. Albuquerque, NM: The University of New Mexico Institute of Social Research. Retrieved from <http://isr.unm.edu/reports/2002/evaluation-of-the-bernalillo-county-metropolitan-dwidrug-court-final-report.pdf>

⁷³ Lapham, S. C., Kapitula, L. R., C'de Baca, J., & McMillan, G. P. (2006). Impaired-driving recidivism among repeat offenders following an intensive court-based intervention. *Accident Analysis & Prevention*, 38(1), 162-169.

⁷⁴ Voas, R. B. (2014). Enhancing the use of vehicle alcohol interlocks with emerging technology. *Alcohol Research: Current Reviews*, 36(1), 81.

⁷⁵ Office of the Illinois Secretary of State. (2018). *Illinois 2019 DUI fact book*. Retrieved from https://www.cyberdriveillinois.com/publications/pdf_publications/dsd_a118.pdf

⁷⁶ Elder, R. W., Voas, R., Beirness, D., Shults, R. A., Sleet, D. A., Nichols, J. L., ... & Task Force on Community Preventive Services. (2011). Effectiveness of ignition interlocks for preventing alcohol-impaired driving and alcohol-related crashes: A Community Guide systematic review. *American Journal of Preventive Medicine*, 40(3), 362-376.

⁷⁷ Office of the Illinois Secretary of State. (2018). *Illinois 2019 DUI fact book*. Retrieved from https://www.cyberdriveillinois.com/publications/pdf_publications/dsd_a118.pdf

⁷⁸ Office of the Illinois Secretary of State. (n.d.) *Breath alcohol ignition interlock device (BAIID)*. Retrieved from <http://www.cyberdriveillinois.com/departments/BAIID/baiid.html>

⁷⁹ Note: A monitoring device driving permit is optional; however, individuals with two or three prior convictions are required to utilize a interlock device and restricted driving permit for at least five years in order to be eligible for full reinstatement.

Office of the Illinois Secretary of State. (2018). *Illinois 2019 DUI fact book*. Retrieved from https://www.cyberdriveillinois.com/publications/pdf_publications/dsd_a118.pdf

⁸⁰ Frank, J. F., Raub, R., Lucke, R. E., & Wark, R. I. (2002). Illinois ignition interlock evaluation. In *Proceedings of the 16th International Conference on Alcohol, Drugs and Traffic Safety* (pp. 105-109). Société de l'assurance automobile du Québec, Quebec City.;

Rauch, W. J., Ahlin, E. M., Zador, P. L., Howard, J. M., & Duncan, G. D. (2011). Effects of administrative ignition interlock license restrictions on drivers with multiple alcohol offenses. *Journal of Experimental Criminology*, 7(2), 127-148.

⁸¹ Coben, J. H., & Larkin, G. L. (1999). Effectiveness of ignition interlock devices in reducing drunk driving recidivism. *American Journal of Preventive Medicine*, 16(1), 81-87.

⁸² Voas, R. B., Marques, P. R., Tippetts, A. S., & Beirness, D. J. (1999). The Alberta Interlock Program: The evaluation of a province-wide program on DUI recidivism. *Addiction*, 94(12), 1849-1859.

Willis, C., Lybrand, S., & Bellamy, N. (2004). Alcohol ignition interlock programmes for reducing drink driving recidivism. *Cochrane Database of Systematic Reviews*, 4.

⁸³ Voas, R. B., DuPont, R. L., Talpins, S. K., & Shea, C. L. (2011). Towards a national model for managing impaired driving offenders. *Addiction*, 106(7), 1221-1227.

⁸⁴ Voas, R. B., DuPont, R. L., Talpins, S. K., & Shea, C. L. (2011). Towards a national model for managing impaired driving offenders. *Addiction*, 106(7), 1221-1227.

⁸⁵ Voas, R. B. (2014). Enhancing the use of vehicle alcohol interlocks with emerging technology. *Alcohol Research: Current Reviews*, 36(1), 81.

⁸⁶ Voas, R. B., DuPont, R. L., Talpins, S. K., & Shea, C. L. (2011). Towards a national model for managing impaired driving offenders. *Addiction*, 106(7), 1221-1227.

⁸⁷ Wiliszowski, C. H., Fell, J. C., McKnight, A. S., Tippetts, A. S., & Ciccel, J. D. (2010). An evaluation of three intensive supervision programs for serious DWI offenders. *Annals of Advances in Automotive Medicine/Annual Scientific Conference*, 54, 375-387.

⁸⁸ Kilmer, B., Nicosia, N., Heaton, P., & Midgette, G. (2013). Efficacy of frequent monitoring with swift, certain, and modest sanctions for violations: Insights from South Dakota's 24/7 Sobriety Project. *American Journal of Public Health*, 103(1), e37-e43.

⁸⁹ Voas, R. B., DuPont, R. L., Talpins, S. K., & Shea, C. L. (2011). Towards a national model for managing impaired driving offenders. *Addiction*, 106(7), 1221-1227.

⁹⁰ Kilmer, Beau and Greg Midgette, Using Certainty and Celerity to Deter Crime: Insights from an Individual-Level Analysis of 24/7 Sobriety, Santa Monica, Calif.: RAND Corporation, WR-1190-NIAAA, 2018. Retrieved from: https://www.rand.org/pubs/working_papers/WR1190.html

⁹¹ Alderden, M., & DeLong, C. (2016). *24/7 Sobriety program summary*. Chicago, IL: Illinois Criminal Justice Information Authority.

Long, L., Talpins, S. K., & DuPont, R. L. (2010). The South Dakota 24/7 Sobriety Project: A summary report. *Highway to Justice*. Retrieved from [http://www.scfcenter.org/resources/SCF-Legislation-and-Programs/States/SD/24-7-Sobriety-Program/24-7%20Sobriety%20Project%20Summary%20Report%202%20\(2010\).pdf](http://www.scfcenter.org/resources/SCF-Legislation-and-Programs/States/SD/24-7-Sobriety-Program/24-7%20Sobriety%20Project%20Summary%20Report%202%20(2010).pdf)

⁹² Loudenburg, R., Drube, G., Leonardson, G., Bathke, J. (2012). South Dakota 24/7 sobriety program evaluation supplemental findings report. Retrieved from <https://atg.sd.gov/docs/AnalysisSupplementalSD24.pdf>

⁹³ Loudenburg, R., Drube, G., & Young, L. (2013). *Analysis of 24/7 Sobriety Program SCRAM Participant DUI Offense Recidivism*. Salem, SD: Mountain Plains Evaluation, LLC.;

Loudenburg, R., Drube, G., Leonardson, G., Bathke, J. (2012). South Dakota 24/7 sobriety program evaluation supplemental findings report. Retrieved from <https://atg.sd.gov/docs/AnalysisSupplementalSD24.pdf>

⁹⁴ 24/7 Sobriety Systems (n.d.). *Programs of interest*. Retrieved from <https://247sober.com/programs/programs-of-interest/>

⁹⁵ Elder, R. W., Shults, R. A., Sleet, D. A., Nichols, J. L., Thompson, R. S., Rajab, W., & Task Force on Community Preventive Services. (2004). Effectiveness of mass media campaigns for reducing drinking and driving and alcohol-involved crashes: A systematic review. *American Journal of Preventive Medicine*, 27(1), 57-65.

⁹⁶ Elder, R. W., Shults, R. A., Sleet, D. A., Nichols, J. L., Thompson, R. S., Rajab, W., & Task Force on Community Preventive Services. (2004). Effectiveness of mass media campaigns for reducing drinking and driving and alcohol-involved crashes: A systematic review. *American Journal of Preventive Medicine*, 27(1), 57-65.

⁹⁷ Yadav, R. P., & Kobayashi, M. (2015). A systematic review: Effectiveness of mass media campaigns for reducing alcohol-impaired driving and alcohol-related crashes. *BMC Public Health*, 15(1), 857.

⁹⁸ Illinois Department of Transportation. (2017). *Evaluation of the 2016 Labor Day Drive Sober or Get Pulled Over campaign*. Springfield, IL: Illinois Department of Transportation, Bureau of Safety Programs and Engineering Evaluation Unit. Retrieved from [http://www.idot.illinois.gov/Assets/uploads/files/Transportation-System/Reports/Safety/Evaluations/Alcohol/2016%20Labor%20Day%20Alcohol%20Report%20\(2\).pdf](http://www.idot.illinois.gov/Assets/uploads/files/Transportation-System/Reports/Safety/Evaluations/Alcohol/2016%20Labor%20Day%20Alcohol%20Report%20(2).pdf)

⁹⁹ Elder, R. W., Shults, R. A., Sleet, D. A., Nichols, J. L., Thompson, R. S., Rajab, W., & Task Force on Community Preventive Services. (2004). Effectiveness of mass media campaigns for reducing drinking and driving and alcohol-involved crashes: A systematic review. *American Journal of Preventive Medicine*, 27(1), 57-65.

Illinois Department of Transportation. (2017). *Evaluation of the 2016 Labor Day Drive Sober or Get Pulled Over campaign*. Springfield, IL: Illinois Department of Transportation, Bureau of Safety Programs and Engineering Evaluation Unit. Retrieved from [http://www.idot.illinois.gov/Assets/uploads/files/Transportation-System/Reports/Safety/Evaluations/Alcohol/2016%20Labor%20Day%20Alcohol%20Report%20\(2\).pdf](http://www.idot.illinois.gov/Assets/uploads/files/Transportation-System/Reports/Safety/Evaluations/Alcohol/2016%20Labor%20Day%20Alcohol%20Report%20(2).pdf)

¹⁰⁰ DeJong, W., & Hingson, R. (1998). Strategies to reduce driving under the influence of alcohol. *Annual Review of Public Health, 19*(1), 359-378.

¹⁰¹ Rothschild, M. L., Mastin, B., & Miller, T. W. (2006). Reducing alcohol-impaired driving crashes through the use of social marketing. *Accident Analysis & Prevention, 38*(6), 1218-1230.

¹⁰² DeJong, W., & Hingson, R. (1998). Strategies to reduce driving under the influence of alcohol. *Annual Review of Public Health, 19*(1), 359-378.;

Boots, K., & Midford, R. (1999). 'Pick-a-Skipper': An evaluation of a designated driver program to prevent alcohol-related injury in a regional Australian city. *Health Promotion International, 14*(4), 337-345.

¹⁰³ Rothschild, M. L., Mastin, B., & Miller, T. W. (2006). Reducing alcohol-impaired driving crashes through the use of social marketing. *Accident Analysis & Prevention, 38*(6), 1218-1230.

¹⁰⁴ Uber Technologies, Inc. (2014). *DUI rates decline in Uber cities*. Retrieved from <https://www.uber.com/blog/chicago/dui-rates-decline-in-uber-cities/>;

Uber Technologies, Inc. & Mothers Against Drunk Driving. (2015). *More options. Shifting mindsets. Driving better choices*. Retrieved from <https://uberblogapi.10upcdn.com/wp-content/uploads/2015/01/UberMADD-Report.pdf>

¹⁰⁵ Martin-Buck, F. (2017). Driving safety: An empirical analysis of ridesharing's impact on drunk driving and alcohol-related crime. *University of Texas at Austin Working Paper*. Retrieved from <http://frankmartinbuck.com/Ridesharing%20and%20Alcohol-Related%20Crime%20by%20Frank%20Martin-Buck.pdf>.

¹⁰⁶ Martin-Buck, F. (2017). Driving safety: An empirical analysis of ridesharing's impact on drunk driving and alcohol-related crime. *University of Texas at Austin Working Paper*. Retrieved from <http://frankmartinbuck.com/Ridesharing%20and%20Alcohol-Related%20Crime%20by%20Frank%20Martin-Buck.pdf>.

¹⁰⁷ Peck, J. L. (2017). New York City drunk driving after Uber. *CUNY Graduate Center PhD Program in Economics Working Paper Series*. Retrieved from https://academicworks.cuny.edu/cgi/viewcontent.cgi?article=1012&context=gc_econ_wp

¹⁰⁸ Dills, A. K., & Mulholland, S. E. (2018). Ride-sharing, fatal crashes, and crime. *Southern Economic Journal, 84*(4), 965-991.;

Martin-Buck, F. (2017). Driving safety: An empirical analysis of ridesharing's impact on drunk driving and alcohol-related crime. *University of Texas at Austin Working Paper*. Retrieved from <http://frankmartinbuck.com/Ridesharing%20and%20Alcohol-Related%20Crime%20by%20Frank%20Martin-Buck.pdf>.

¹⁰⁹ Martin-Buck, F. (2017). Driving safety: An empirical analysis of ridesharing's impact on drunk driving and alcohol-related crime. *University of Texas at Austin Working Paper*. Retrieved from <http://frankmartinbuck.com/Ridesharing%20and%20Alcohol-Related%20Crime%20by%20Frank%20Martin-Buck.pdf>.

-
- ¹¹⁰ Barrios, J. M., Hochber, Y. V., & Yi, L. H. (2018). The cost of convenience: Ridesharing and traffic fatalities. *University of Chicago Booth School of Business New Working Paper Series No. 27*. Retrieved from <https://research.chicagobooth.edu/-/media/research/stigler/pdfs/workingpapers/27thecostofconvenience.pdf>
- ¹¹¹ Brazil, N., & Kirk, D. S. (2016). Uber and metropolitan traffic fatalities in the United States. *American Journal of Epidemiology*, *184*(3), 192-198.
- ¹¹² Fell, J. C., & Voas, R. B. (2006). Mothers against drunk driving (MADD): The first 25 years. *Traffic Injury Prevention*, *7*(3), 195-212.;
- Hingson, R., & Winter, M. (2003). Epidemiology and consequences of drinking and driving. *Alcohol Research and Health*, *27*(1), 63-78.;
- Sweedler, B. M., Biecheler, M. B., Laurell, H., Kroj, G., Lerner, M., Mathijssen, M. P. M., ... & Tunbridge, R. J. (2004). Worldwide trends in alcohol and drug impaired driving. *Traffic Injury Prevention*, *5*(3), 175-184.
- ¹¹³ Schaper, D. (2018). Even as cars get safer, traffic fatalities still high. *National Public Radio, Inc.* Retrieved from <https://www.npr.org/2018/08/22/640829988/even-as-cars-get-safer-traffic-fatalities-still-high>
- ¹¹⁴ Sleet, D. A., Howat, P., Elder, R., Maycock, B., Baldwin, G., & Shults, R. (2009). Interventions to reduce impaired driving and traffic injury. In J.C. Verster, S.R. Pandl-Perumal, J.G. Ramaekers, & J. J. de Gier (Eds.), *Drugs, driving and traffic safety* (pp. 439-456). Basel, Switzerland: Birkhäuser.;
- Voas, R. B., DuPont, R. L., Talpins, S. K., & Shea, C. L. (2011). Towards a national model for managing impaired driving offenders. *Addiction*, *106*(7), 1221-1227.
- ¹¹⁵ Sleet, D. A., Howat, P., Elder, R., Maycock, B., Baldwin, G., & Shults, R. (2009). Interventions to reduce impaired driving and traffic injury. In J.C. Verster, S.R. Pandl-Perumal, J.G. Ramaekers, & J. J. de Gier (Eds.), *Drugs, driving and traffic safety* (pp. 439-456). Basel, Switzerland: Birkhäuser.
- ¹¹⁶ Brady, J. E., & Li, G. (2014). Trends in alcohol and other drugs detected in fatally injured drivers in the United States, 1999–2010. *American Journal of Epidemiology*, *179*(6), 692-699.;
- Salomonsen-Sautel, S., Min, S. J., Sakai, J. T., Thurstone, C., & Hopfer, C. (2014). Trends in fatal motor vehicle crashes before and after marijuana commercialization in Colorado. *Drug and Alcohol Dependence*, *140*, 137-144.;
- Wilson, F. A., Stimpson, J. P., & Pagán, J. A. (2014). Fatal crashes from drivers testing positive for drugs in the US, 1993–2010. *Public Health Reports*, *129*(4), 342-350.
- ¹¹⁷ Brady, J. E., & Li, G. (2013). Prevalence of alcohol and other drugs in fatally injured drivers. *Addiction*, *108*(1), 104-114.;
- Jin, H., Williams, S. Z., Chihuri, S. T., Li, G., & Chen, Q. (2018). Validity of oral fluid test for Delta-9-tetrahydrocannabinol in drivers using the 2013 National Roadside Survey Data. *Injury Epidemiology*, *5*(1), 3.;

Schwilke, E. W., Sampaio dos Santos, M. I., & Logan, B. K. (2006). Changing patterns of drug and alcohol use in fatally injured drivers in Washington State. *Journal of Forensic Sciences*, 51(5), 1191-1198.

¹¹⁸ Chihuri, S., Li, G., & Chen, Q. (2017). Interaction of marijuana and alcohol on fatal motor vehicle crash risk: A case-control study. *Injury Epidemiology*, 4(1), 8.

Subbaraman, M. S., & Kerr, W. C. (2015). Simultaneous versus concurrent use of alcohol and cannabis in the National Alcohol Survey. *Alcoholism: Clinical and Experimental Research*, 39(5), 872-879.