

Texas A&M Transportation Institute

Texas Ignition Interlock Training, Outreach, and Evaluation

FY2020 Penetration Analysis Technical
Memorandum

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Introduction

Ignition interlock devices (IIDs) are intended to stop drivers from operating their vehicle if their blood alcohol concentration (BAC) is above a pre-set limit (Centers for Disease Control and Prevention, 2015). When installed as prescribed, IIDs can be effective at reducing driving while intoxicated (DWI) recidivism by up to 70 percent. Based on this success rate, the National Highway Traffic Safety Administration (NHTSA) identifies IIDs as a countermeasure that works (Centers for Disease Control and Prevention, 2016; Richard, Magee, Bacon-Abdelmoteleb, & Brown, 2018).

Despite identification of IIDs as an effective countermeasure, NHTSA's report includes challenges associated with employing IIDs as part of an overall approach to reducing impaired driving; for example, only a small percentage of eligible offenders have a device installed, and rural areas may have limited access to IIDs (Richard, Magee, Bacon-Abdelmoteleb, & Brown, 2018). Other reports indicate that IIDs are not being used to their fullest potential and are only installed on a small fraction of the vehicles of impaired drivers who are arrested (Mothers Against Drunk Driving, 2013). Some of the general barriers to optimal IID use include:

- coordination difficulties within state agencies,
- gaps in rural coverage of providers,
- limited infrastructure or funding in agencies to monitor interlocks,
- the cost of IIDs, and
- limited public awareness of IIDs (e.g., judges and prosecutors).

When examining the effectiveness of IIDs, researchers looked at how prevalent the orders are in alcohol-impaired driving when required by statute or recommended by behavioral research. This type of assessment is referred to as a *penetration analysis* and shows when IIDs are ordered as part of bond or probation. It is important to understand the penetration of IIDs at local and state levels to recognize potential barriers and identify methods to overcome these barriers.

Information on the penetration of IIDs in Texas is limited. Specifically missing is information on how often IIDs are used when mandated by Texas law. Cassanova-Powell et al. (2015) found that Texas had the greatest number of IIDs in use with 33,064 devices in service in 2011. This represented a 285 percent increase in IID use from 2006. The rate of IIDs ordered among those arrested for DWI in 2011 was 19 per every 100 DWI arrests in Texas (Cassanova-Powell, Hedlund, Leaf, Tison, & Preusser Research Group, 2015). The most recent statistics from the Annual Ignition Interlock Survey in the United States found that Texas had the largest number of new IIDs in 2017 with 37,477 devices being installed (Traffic Injury Research Foundation USA Inc. , 2018).

Currently, limited studies have explored the penetration of IIDs at the city or county level. The Texas Specific Ignition Interlock Penetration Study conducted in 2014 and 2015 was one of the first localized penetration studies. The study indicated that IID orders ranged from 15 to 38 percent for conditions of bond and from 65 to 66 percent for conditions of probation (National Injury Prevention Council, 2015). However, a significant limitation reported by the

Texas Specific Ignition Interlock Penetration Study was the lack of a uniform record-keeping system; therefore, the reported penetration rates should be interpreted with caution (National Injury Prevention Council, 2015).

In 2019, the Texas A&M Transportation Institute performed an IID recidivism study using El Paso County, Texas, case record data and found that 80 percent of DWI cases with bond conditions had some form of alcohol monitoring (e.g., IID, home unit, or urinalysis) ordered (Texas A&M Transportation Institute, 2019). However, the purpose of the El Paso County study was to explore recidivism rates; limited information was provided on IID penetration.

The purpose of this technical memorandum is to report the results of an IID penetration analysis among DWI offenders in Montgomery County, Texas. This analysis was conducted through a partnership with the Montgomery County District Attorney's Office, which provided access to an electronic database system that provided quality DWI offender and criminal case data.

Methods

Data Collection

The Montgomery County District Attorney's Office provided detailed records for DWI incidents that occurred in the county during 2015. Data from arrests records, charges, bond hearings, adjudication, and IID orders were all part of the data set. This list was used to access case information from the Montgomery County Clerk and District Clerks, who were responsible for maintaining the repository of electronic DWI cases (Montgomery County, 2020; Montgomery County, 2020).

The County Clerk's records database system is publicly available and is the repository for misdemeanor cases. The District Clerk's records database system has more access restrictions since it stores criminal records/data related to felony cases. A web-based survey tool called Qualtrics was used to extract information from both the County and District Clerks Offices' case search systems (see Appendix: Qualtrics Extraction Form).

To determine rural classification from the cases, zip codes were assigned as rural or urban using Federal Office of Rural Health Policy (FORHP) data files (Health Resources and Services Administration, 2020). FORHP defines all non-metropolitan counties as rural and uses rural-urban commuting area (RUCA) codes to determine rurality (Health Resources and Services Administration, 2020). The RUCA codes allow for the identification of rural areas in metropolitan counties. Montgomery County is considered an urban county, but multiple rural areas are within the geographic area.

Several Texas statutes require IIDs. Table 1 details these requirements.

TABLE 1. INSTANCES WHERE IIDs ARE REQUIRED IN TEXAS.

Condition of Bond	Condition of Probation
Subsequent offenses	DWI with BAC \geq 0.15
Intoxication assault charges	50% of probation term for subsequent offenses
Intoxication manslaughter charges	50% of probation term for defendants under 21 years old
DWI with a child passenger	50% or probation term

Data Analysis

Descriptive statistics were used to explore the penetration of IIDs. Two aspects of penetration were explored:

- general use among cases and
- use when required by Texas statute.

In Texas, judges may choose not to order an IID if they find conditions or circumstances not to be in the best interest of justice. Factors that might be considered not in the best interest of justice include, but are not limited to, evidence in the case that does not support conviction, extenuating circumstances related to the offender’s family, or the health of the offender.

Findings

Demographics

Montgomery County provided 2,289 DWI cases for 2015. Of these, 139 were duplicate cases, 8 had errors (e.g., case unfiled), and 22 could not be found in the electronic system. After removing these cases, 2,120 cases were included in the analysis for 2,068 individuals. These offenders had the following number of offenses:

- 2,018 were individual offenders with one DWI case,
- 49 were individual offenders with two DWI cases, and
- 1 was an individual offender with three DWI cases.

A majority of the DWI offenders were identified as male (74 percent). The most common reported race was white (91 percent). The two most common age categories were 25 to 34 years old (35 percent) and 35 to 44 years old (33 percent). Both of these age groups were listed due to how close they were in frequency. The average defendant age was 36 years old with a range between 16 and 76 years.

To further explore demographics, U.S. Census American Community Survey data were used to compare Montgomery County population with the individual DWI offenders with a 2015 DWI case. Males were overrepresented as well as DWI offenders between the age of 16 to 54 years old. Due to differences in definitions, race/ethnicity was not comparable between the data sets.

Most rural and urban comparisons fell within 5 percentage points of each other. However, the 55- to 64-year-old range saw a large disparity between rural and urban: the 55- to 64-year-old range represented 12 percent of the rural DWI cases but only 6 percent of the urban DWI cases. Additionally, urban DWI cases among the three lowest age ranges averaged 4 to 5 percent higher than their respective rural counterparts.

Based on the reported zip codes, 4 percent of the individuals resided in rural areas. Interestingly, 27 percent of the cases not found in the electronic system were rural, which could indicate a record-keeping issue for these areas. While the white population was underrepresented and the Black or African-American population was overrepresented among rural individuals, researchers considered that census information was based on the county as a whole and might not be representative of the populations in either the rural or urban areas specifically.

Table 2 summarizes the demographics of the 2,018 individuals in Montgomery County’s 2015 DWI cases.

TABLE 2. DEMOGRAPHICS OF INDIVIDUALS WITH A DWI CASE IN MONTGOMERY TEXAS IN 2015.

Factor	Individuals (Percent)	Rural Individuals (Percent)	Urban Individuals (Percent)	Census (United States Census Bureau, 2020)
Female	535 (26%)	23 (28%)	512 (26%)	50.5%
Male	1,532 (74%)	59 (72%)	1,473 (74%)	49.5%
Gender missing	1 (0%)	0 (0%)	1 (<1%)	0 (0%)
White	1,873 (91%)	70 (85%)	1,803 (91%)	86.5%
Hispanic, Latino, or Spanish origin of any race	3 (<1%)	0 (0%)	3 (<1%)	0 (0%)
Black or African American	144 (7%)	10 (12%)	134 (7%)	4.7%
Asian or Pacific Islander	2 (<1%)	0 (0%)	2 (0.1%)	2.8%
Other race	10 (<1%)	1 (1%)	9 (0.5%)	0 (0%)
Race unknown	35 (2%)	1 (1%)	34 (2%)	0 (0%)
16 to 24 years old ²	385 (19%)	12 (15%)	173 (19%)	12.9%
25 to 34 years old	713 (35%)	25 (31%)	688 (35%)	12.7%
35 to 44 years old	463 (22%)	15 (18%)	448 (23%)	13.7%
45 to 54 years old	324 (16%)	14 (17%)	310 (16%)	13.8%
55 to 64 years old	134 (7%)	12 (15%)	122 (6%)	12.3%
65 years old or older	36 (2%)	2 (2%)	34 (2%)	12.5%
Age missing	13 (<1%)	2 (2%)	11 (<1%)	0 (0%)

¹ The U.S. Census Bureau has different race categories from the data. Comparison groups were provided when available.

² The U.S. Census Bureau’s age range is 15 to 24 years old.

IID Penetration

Condition of Bond

This section looks at the use of IIDs for a condition of bond and disposition based on offense and rural classification.

Approximately 38 percent of the DWI cases had an IID ordered as a condition of bond. Table 3 shows the offenses charged for individuals who had an IID ordered as a condition of bond. Of those DWI defendants who were ordered an IID as a condition of bond, 71 percent were charged in 2015 with a DWI subsequent offense (e.g., DWI second or DWI third offense). When comparing rural DWI cases to urban DWI cases, differences among the charges were minimal, averaging less than 1 percent deviation across the seven DWI-related offenses.

TABLE 3. OFFENSE CHARGED FOR CASES WITH IID AS A CONDITION OF BOND.

Offense ¹	Number of Cases (Percent)	Number of Rural Cases (Percent)	Number of Urban Cases (Percent)
DWI first offense	125 (16%)	5 (16%)	120 (16%)
DWI BAC ≥ 0.15	117 (15%)	4 (13%)	113 (15.0%)
DWI with a child	56 (7%)	3 (9%)	53 (7.0%)
DWI with an open container	4 (<1%)	0 (0%)	4 (<1%)
DWI subsequent offenses	559 (71%)	22 (69%)	537 (71%)
Intoxication assault	2 (<1%)	0 (0%)	2 (<1%)
Boating while intoxicated	1 (<1%)	0 (0%)	1 (<1%)

¹ Individuals could have been charged with multiple offenses; therefore, the total is greater than 100 percent.

The project team further explored how often IIDs were ordered as a condition of bond when required by Texas law. This includes:

- subsequent offenses,
- DWI with a child passenger, and
- intoxication assault or intoxication manslaughter.

Approximately 33 percent of the Montgomery County DWI cases required an IID under the aforementioned instances. Of those DWI cases, 89 percent were ordered an IID as a condition of bond. This high rate of compliance illustrates that IIDs are being ordered as mandated by Texas law in Montgomery County, Texas. However, it is vital to understand the characteristics of the remaining 11 percent of DWI cases that should have been ordered an IID as a condition of bond to determine what can be done to improve this statistic.

Approximately 65 percent of these cases involved a DWI subsequent misdemeanor offense that was eventually pled out (data not shown). Of the cases that were pled out, 82 percent of defendants were sentenced to jail time, and 38 percent of defendants were sentenced to

probation (data not shown; a defendant could receive both jail and probation). Of the cases dismissed:

- 30 percent were due to the case being refiled,
- 20 percent involved the defendant being convicted in another case,
- 10 percent were in the interest of justice, and
- 40 percent had no dismissal cause listed (data not shown).

In addition, the data were explored to determine if individuals with multiple cases had an IID installed on another 2015 case. Ten percent of the individuals who did not have an IID on a case requiring a device had an IID installed as a condition of bail on another case.

Rural distribution is comparable to all cases.

Table 4 lists the characteristics of DWI cases that did not receive an IID as a condition of bond.

TABLE 4. CHARACTERISTICS OF CASES THAT DID NOT RECEIVE AN IID AS A CONDITION OF BOND AS REQUIRED BY TEXAS LAW.

Case Characteristics	Number of Cases (Percent)	Number of Rural Cases (Percent)	Number of Urban Cases (Percent)
Offense Charged			
DWI subsequent offenses	71 (90%)	3 (100%)	68 (90%)
DWI with a child ¹	9 (11%)	0 (0%)	9 (12%)
Defendant Age			
Under 21 years old	1 (1%)	0 (0%)	1 (1%)
22 years old or older	79 (99%)	3 (100%)	75 (99%)
Charge Level			
Misdemeanor	50 (63%)	2 (67%)	48 (63%)
Felony	29 (27%)	1 (33%)	28 (37%)
Disposition Classification			
Plea	68 (86%)	3 (100%)	65 (86%)
Dismissed/acquitted	11 (14%)	0 (0%)	11 (14%)

¹ Individuals could have been charged with multiple offenses; therefore, the total is greater than 100 percent.

Overall, 23 percent of DWI offenders received an IID as a condition of bond when not required by law. A majority of the cases involved a misdemeanor DWI offense with a BAC of 0.15 or greater.

Judges can order IIDs for DWI first offenses or DWIs with a BAC less than 0.15 at their discretion. Of the cases that were pled out, 85 percent of defendants were sentenced to jail time (data not shown). Of the cases dismissed:

- 71 percent were due to the defendant completing pre-trial diversion,
- 13 percent were due to the defendant being convicted on another case,

- 8 percent could not be proven beyond a reasonable doubt, and
- 8 percent were for other reasons (data not shown).

Rural distribution was comparable to all cases. Rural cases again trended similar to urban cases for defendants that were ordered an IID as a condition of bond when not required by law, with the only outlier being defendant age, which represented 14 percent of rural cases but only 5 percent of urban cases.

Table 5 summarizes the characteristics of DWI cases receiving an IID as a condition of bond when not required by law.

TABLE 5. CHARACTERISTICS OF CASES THAT RECEIVED AN IID AS A CONDITION OF BOND WHEN NOT REQUIRED BY TEXAS LAW.

Case Characteristics	Number of Cases (Percent)	Number of Rural Cases (Percent)	Number of Urban Cases (Percent)
Offense Charged¹			
DWI first offense	123 (68%)	4 (57%)	119 (69%)
DWI BAC ≥ 0.15	107 (59%)	4 (57%)	103 (60%)
DWI open container	4 (2%)	0 (0%)	4 (2%)
DWI subsequent offenses	2 (1%)	0 (0%)	2 (1%)
Defendant Age			
Under 21 years old	10 (6%)	1 (14%)	9 (5%)
22 years old or older	170 (94%)	6 (86%)	164 (95%)
Charge Level			
Misdemeanor	177 (98%)	7 (100%)	170 (98%)
Felony	3 (2%)	0 (0%)	3 (2%)
Disposition Classification			
Plea	150 (83%)	6 (86%)	144 (83%)
Dismissed	24 (13%)	1 (14%)	23 (13%)
Jury or bench trial	3 (2%)	0 (0%)	3 (2%)
Unknown	3 (2%)	0 (0%)	3 (2%)

¹ Individuals could have been charged with multiple offenses; therefore, the total is greater than 100 percent.

Next, ordering an IID as a condition of bond was explored by the defendant’s rural classification. Comparable percentages of IIDs were ordered as a condition of bond between rural and urban defendants, 39 versus 37 percent, respectively. Approximately 89 percent of both rural and urban DWI defendants were ordered IIDs as a condition of bond when required by law. However, these results should be interpreted with caution because only 83 DWI cases were classified as rural.

Disposition

Approximately 25 percent of the DWI cases disposed of were given probation as a term of disposition. Of these DWI cases, 58 percent were assigned an IID as a condition of probation. Of those ordered an IID as a condition of probation, 63 percent were charged with a subsequent offense. There were no rural offenses where the driver's BAC was 0.15 or greater, despite accounting for 6 percent of the urban cases. However, other offenses trended similarly for both rural and urban cases.

Table 6 shows the offense at disposition for DWI cases with an IID as a condition of probation.

TABLE 6. OFFENSE AT DISPOSITION FOR CASES WITH AN IID AS A CONDITION OF PROBATION.

Offense ¹	Number of Cases (Percent)	Number of Rural Cases (Percent)	Number of Urban Cases (Percent)
DWI first offense	66 (25%)	2 (22%)	64 (25%)
DWI BAC ≥ 0.15	14 (5%)	0 (0%)	14 (6%)
DWI with a child	20 (8%)	1 (11%)	19 (8%)
DWI subsequent offenses	165 (64%)	6 (67%)	159 (63%)
Intoxication assault	1 (<1%)	0 (0%)	1 (<1%)

¹ Individuals could have been charged with multiple offenses; therefore, the total is greater than 100 percent.

The disposition of the DWI case was explored to determine how often IIDs were ordered as a condition of probation when mandated by Texas law, including:

- defendants under the age of 21 years old,
- subsequent offenses, and
- DWI BAC of 0.15 or greater.

Of the DWI cases assigned probation, 48 percent of DWI offenders had charges requiring an IID as a condition of probation, and 85 percent of the offenders had an IID ordered.

To improve this statistic, it is important to understand the characteristics of the remaining 15 percent of DWI cases that should have been ordered an IID as a condition of probation. Overall, a majority of these cases involved a DWI first offense involving a defendant under 21 years old (53 percent were DWI first offenses with a defendant under 21 years old) (data not shown). Of the cases that were pled out, 35 percent of defendants were sentenced to jail time and probation (data not shown).

Rural distribution was comparable among all cases.

Table 7 lists the characteristics of cases that did not receive an IID as a condition of probation as required by Texas law.

TABLE 7. CHARACTERISTICS OF CASES THAT DID NOT RECEIVE AN IID AS A CONDITION OF PROBATION AS REQUIRED BY TEXAS LAW.

Case Characteristics	Number of Cases (Percent)	Number of Rural Cases (Percent)	Number of Urban Cases (Percent)
Offense at Disposition			
DWI first offense	21 (66%)	1 (100%)	20 (65%)
DWI BAC ≥ 0.15	10 (31%)	0 (0%)	10 (32%)
DWI second offense	5 (16%)	0 (0%)	5 (16%)
Defendant Age			
Under 21 years old	15 (47%)	1 (100%)	15 (48%)
22 years old or older	17 (53%)	0 (0%)	17 (52%)
Charge Level			
Misdemeanor	30 (94%)	1 (100%)	29 (94%)
Felony	2 (6%)	0 (0%)	2 (7%)
Disposition Classification			
Plea	31 (97%)	1 (100%)	30 (97%)
Jury trial	1 (3%)	0 (0%)	1 (3%)

¹ Individuals could have been charged with multiple offenses; therefore, the total is greater than 100 percent.

Overall, 29 percent of DWI offenders received an IID as a condition of probation when not required by law. A majority of these cases involved a DWI first offense. Interestingly, 27 percent involved a DWI second offense that was reduced to a DWI first offense, which may have resulted in the order of an IID. Judges can order IIDs for DWI first offenses at their discretion.

Rural distribution was comparable among all cases.

To better understand the penetration and ordering of IIDs, Table 8 summarizes the characteristics of these cases.

TABLE 8. CHARACTERISTICS OF CASES THAT RECEIVED AN IID AS A CONDITION OF PROBATION WHEN NOT REQUIRED BY TEXAS LAW.

Case Characteristics	Number of Cases (Percent)	Number of Rural Cases (Percent)	Number of Urban Cases (Percent)
Offense Charged¹			
DWI first offense	36 (47%)	0 (0%)	36 (45%)
DWI first offense (reduced from DWI second offense)	21 (27%)	2 (67%)	19 (26%)
DWI with a child	19 (25%)	1 (33%)	18 (24%)
Intoxication assault	1 (1%)	0 (0%)	1 (1%)
Charge Level			
Misdemeanor	48 (62%)	2 (67%)	46 (62%)
Felony	29 (38%)	1 (33%)	28 (38%)
Disposition Classification			
Plea	77 (100%)	3 (100%)	74 (100%)

¹ Individuals could have been charged with multiple offenses; therefore, the total is greater than 100 percent.

To further explore if the legal requirements were met, researchers revised the DWI offenders that required an IID for at least 50 percent of the probation term (e.g., defendants under the age of 21 years old and subsequent offenses). A total of 169 DWI offenders were assigned probation that met this condition based on age or a subsequent DWI-related offense. Of those:

- 56 percent of the DWI cases did not include the IID removal order in the case files,
- 20 percent of the DWI offenders had the IID on for at least 50 percent of the probated term, and
- 24 percent of the offenders had the IID removed prior to 50 percent of the probated term.

Of the DWI cases that did not have an IID removal order in the case file, 97 percent were urban defendants.

Next, IID orders as a condition of probation were explored by the offender’s rural classification. Comparable percentages of IIDs were ordered as a condition of probation between rural and urban DWI offenders, 60 versus 58 percent, respectively. Rural DWI offenders had a slightly higher percentage of IIDs being ordered as a condition of probation when required by law than urban DWI offenders, 86 versus 85 percent, respectively. These results should be interpreted with caution because a limited number of rural DWI offenders were ordered an IID as a condition of probation (n=9).

Summary

The demographic patterns of the cases are consistent with other sources on impaired driving. The Substance Abuse and Mental Health Services Administration (SAMHSA) reports that males and younger populations had higher percentages of driving under the influence of alcohol (SAMHSA, 2016).

Overall penetration rates identified in this analysis were compared to findings from the 2015 Texas Specific Ignition Interlock Penetration Study funded by the National Injury Prevention Council (National Injury Prevention Council, 2015). In cases where IIDs were required by Texas law as a condition of bond, 89 percent of Montgomery County cases had an IID ordered compared to between 15 and 38 percent in the 2015 DWI penetration report, which may be due to differences in records reviewed.

A similar finding was found for cases requiring an IID as a condition of probation, with 85 percent of Montgomery County cases meeting this condition compared to 65 to 66 percent in the 2015 report. These differences could be due to locations included in studies or through overall increases in the penetration of IIDs in Texas.

Based on the Traffic Injury Research Foundation's Annual Ignition Interlock Survey conducted in the United States, IID use has increased in Texas by 9.4 percent from 2016 to 2017 alone (Traffic Injury Research Foundation USA Inc. , 2018). When comparing rural statistics with urban statistics, despite the small sample size for rural cases, most trends were surprisingly similar. More research is needed to explore rates of installation for rural versus urban areas and, subsequently, the rates of monitoring the reports that IIDs generate. One large disparity found when comparing rural and urban cases was that, despite accounting for just 4 percent of the cases, 27 percent of the cases not located in the electronic system used for storing information about the cases were rural cases.

Overall, Montgomery County prosecutors and courts properly recommended and ordered IIDs a majority of the time when required by Texas law. However, 11 and 15 percent of DWI cases that required an IID to be ordered did not receive one as a condition of bond or probation, respectively. In addition, approximately 25 percent of DWI offenders that were required to have an IID for 50 percent of their probation term were reported to have the device removed early.

According to Taylor et al. (2017), a primary limitation to seeing the full effects and benefits of IIDs is limited penetration; therefore, it is vital that IIDs be used as required by law and under the judge's discretion for other circumstances. Additionally, the Centers for Disease Control and Prevention reports that a potential barrier to penetration of IIDs includes judges who may not be comfortable enforcing IID statutory requirements and their associated costs (Centers for Disease Control and Prevention, 2015).

Intoxalock reports that costs to install and use one of its IID units runs approximately between \$70 to \$150 to install and \$60 to \$90 per month for use (Intoxalock, 2020). This means that if a defendant was ordered to install an IID as a condition of bond and it took 12 months for the

defendant's case to be disposed of, the defendant would pay anywhere from \$790 to \$1,230 (Intoxalock, 2020). When median income is considered, Montgomery County citizens average \$77,416 annually, which means an IID would cost approximately 2 percent of someone's pre-tax income. This figure does not factor in other legal costs associated with a DWI (United States Census Bureau, 2020).

Based on anecdotal evidence, when income or financial ability becomes a factor in determining whether or not an IID is needed, the device may not be ordered due to financial hardship. In these cases, the IID goes uninstalled based on being in the "best interest of justice." To address financial hardship on the offender, states have developed financial assistance programs that assist with the costs. Additionally, many IID providers offer discounts for DWI offenders who are unable to meet the more traditional financial requirements (Intoxalock, 2020; SmartStart, 2020).

Interestingly, 63 percent of DWI defendants that should have received an IID as a condition of bond either had their cases pled out or the defendants were convicted and sentenced to jail time. Many of the first-time and repeat DWI offenders examined in this analysis pled guilty to the DWI offense and accepted a jail sentence in lieu of probation. By doing so, they bypassed probation, which often includes IID as a condition of sentencing. In short, once the DWI offenders served their jail sentence, they were free to integrate back into society, often driving illegally or under a conditional driver's license. Most of the time, offenders drove without an IID because they were not on probation. There is a strong need to conduct further research on this phenomenon to understand how jailed DWI offenders re-offend in comparison to DWI offenders that have had IIDs ordered as a condition of sentencing.

Additionally, there is limited research on the socioeconomic status of DWI offenders, but Kunitz et al. (2006) hypothesized that lower-income defendants may see a higher percentage of jail time than others. Often judges do not believe that lower socioeconomic offenders can afford the fees and fines associated with probation, and jail time is often offered as an alternative sentence.

Interestingly, this analysis found that 53 percent of DWI cases where the offender should have received an IID as a condition of probation were for DWI first offenses involving a defendant under 21 years old. DWI offenders under 21 years old are required by law to have an IID ordered and installed on any vehicle that they regularly drive. However, many of these offenders, who would have an IID installed as a condition of bond, quickly plead guilty to the offense and serve a short jail sentence. Once the jail sentence is served, the offender's IID order is removed, and no additional order is made post-release. This remains a problem in that IID as a treatment to stop further DWI offenses is no longer an option, making recidivism that much more probable.

The Texas Specific Ignition Interlock Penetration Analysis suggested that trial judges may not have access to the defendant's criminal history and must be notified by the prosecutor to trigger an automatic IID order (National Injury Prevention Council, 2015). The report recommended that judges ask more questions to better determine how age and prior offenses should trigger automatic IID orders (National Injury Prevention Council, 2015). This should also include charges in other counties for precursor offenses such as reckless driving and obstruction of a highway. Often these charges are the result of a plea agreement where the original charge of DWI is

reduced to a lesser offense within the same criminal offense classification. Minor-in-possession charges and public intoxication should also be considered since these charges and the number of times they are committed can point to the defendant having significant alcohol use issues that could possibly have led up to the DWI offense.

Future research in Montgomery County, Texas, should identify factors that judges use when not ordering an IID, including unit cost, socioeconomic impact, offense type, and other influencing factors. This information cannot be ascertained through case information but could easily be obtained by surveying judges. Using surveys to determine factors associated with ordering IIDs, as well as potential differences among ordering IIDs for rural versus urban defendants, should be explored. Finally, other data sources that could be used to complement case records could include census data to better understand educational levels, median income, and other meaningful characteristics of DWI offenders. Exploring census or other person-level data could also lead to meaningful findings such as the percentage of DWI offenses by county residents versus visitors to the county. Since many alcohol-related offenses occur at densely visited recreational areas in the county (Lake Conroe), it would be interesting to determine DWI offender rate differences between the groups so that approaches and messaging toward education, enforcement, and encouragement can be performed and reach the correct audience.

Lastly, a few limitations should be considered when interpreting the results of this analysis, including:

- a limited number of offenders were classified as rural,
- only one year of data was used to explore penetration,
- the length of interlock use was not available for most cases, and
- it was not feasible to determine whether defendants installed an IID after it was ordered.

Despite these limitations, this analysis provides information on the penetration and use of IIDs throughout Montgomery County, Texas. Future expansions of this analysis should include adding additional years of DWI cases, assessing temporal and spatial patterns, and expanding the analysis to include multiple counties as feasible.

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Appendix: Qualtrics Extraction Form

Offense Information 2019–2020

Start of Block: Default Question Block

Q1 Name

- Full Name (First Middle Last) (1) _____
 - First Name (2) _____
 - Middle Name (3) _____
 - Last Name (4) _____
 - Case Number (5) _____
 - Gender (Male/Female) (6) _____
 - Zip Code (7) _____
-

Q2 Date of Birth

	Month	Day	Year
Please Select: (1)	▼ January (1) ... December (12)	▼ 1 (1) ... 31 (31)	▼ 1900 (1) ... 2049 (150)

Q3 Offense (Select All That Apply)

- DWI 1st (1)
 - DWI 2nd (2)
 - DWI 3rd (3)
 - DWI with open container (4)
 - DWI with child (5)
 - DWI BAC \geq 0.15 (6)
 - Intoxication assault (7)
 - Intoxication manslaughter (8)
 - Other (please specify): (9) _____
-

Q4 Date of Offense

	Month	Day	Year
Please Select: (1)	▼ January (1) ... December (12)	▼ 1 (1) ... 31 (31)	▼ 1900 (1) ... 2049 (150)

Q5 Was bail set?

- Yes (1)
 - No (2)
 - Not specified in records (3)
-

Display This Question:

If Was bail set? = No

Q6 If bail was not set, is the defendant still in jail?

- Yes (1)
 - No (2)
 - Not specified in records (3)
-

Display This Question:

If Was bail set? = Yes

Q7 Were conditions set for the bail?

- Yes (1)
 - No (2)
 - Not specified in records (3)
-

Display This Question:

If Were conditions set for the bail? = Yes

Q8 If yes, were any of the following forms of alcohol monitoring ordered? Select all that apply.

- IID (1)
- In-home alcohol monitoring (2)
- UA/BA (3)
- Other (please specify): (4) _____
- No alcohol monitoring ordered/documentated in record (5)

Display This Question:

If yes, were any of the following forms of alcohol monitoring ordered? Select all that apply. = IID

Q9 If IID was ordered as a condition of bond, provide the removal date if available.

	Month	Day	Year
Please Select: (1)	▼ January (1) ... December (12)	▼ 1 (1) ... 31 (31)	▼ 1900 (1) ... 2049 (150)

Q10 Offense Charge Date

	Month	Day	Year
Please Select: (1)	▼ January (1) ... December (12)	▼ 1 (1) ... 31 (31)	▼ 1900 (1) ... 2049 (150)

Q11 Offense Charged (Select All That Apply)

DWI 1st (1)

DWI 2nd (2)

DWI 3rd (3)

DWI with open container (4)

DWI with child (5)

DWI BAC \geq 0.15 (6)

Intoxication assault (7)

Intoxication manslaughter (8)

Other (please specify): (9) _____



Q12 Offense Disposition (Select All That Apply)

- DWI 1st (1)
 - DWI 2nd (2)
 - DWI 3rd (3)
 - DWI with open container (4)
 - DWI with child (5)
 - DWI BAC \geq 0.15 (6)
 - Intoxication assault (7)
 - Intoxication manslaughter (8)
 - Other (please specify): (9) _____
-

Q13 Disposition Type

- Plea (1)
 - Jury trial (2)
 - Dismissal (3)
 - Bench trial (4)
 - Directed verdict (5)
 - Other (please specify) (6) _____
-

Display This Question:

If Disposition Type = Dismissal

Q14 Why was the case dismissed? Select all that apply.

- Pre-trial diversion completed (1)
- Insufficient evidence (2)
- Defendant convicted in another case (3)
- Complaining witness requested dismissal (4)
- Case was refiled (if selected, enter case number) (5) _____
- Case 12.45'd into (specify) (6) _____
- Evidence suppressed or suppressible (7)
- Necessary witness(es) cannot be located (8)
- Defendant is a juvenile (9)
- Defendant died (specify date) (10) _____
- Other (please specify): (11) _____

Q15 Date of Disposition

	Month	Day	Year
Please Select: (1)	▼ January (1) ... December (12)	▼ 1 (1) ... 31 (31)	▼ 1900 (1) ... 2049 (150)

Q16 Court Information

- Court (1) _____
 - Judge (2) _____
 - Prosecutor (3) _____
-

Q17 Disposition (Select All That Apply)

- Jail/prison (1)
 - Probation (2)
 - Fines (3)
 - Other (please specify) (5) _____
-

Display This Question:

If Disposition (Select All That Apply) = Jail/prison

Q18 If jail/prison was a term of disposition, what was the length of time ordered?

Display This Question:

If Disposition (Select All That Apply) = Probation

Q19 If probation was a term of disposition, what was the length of time ordered?

Display This Question:

If Disposition (Select All That Apply) = Probation

Q20 What were the unique probation terms?

- AA/NA (1)
 - VIP (2)
 - Alcohol monitoring (e.g., interlock, other) (3)
 - DWI education (4)
 - DWI repeat school (5)
-

Display This Question:

If What were the unique probation terms? = Alcohol monitoring (e.g., interlock, other)

Q21 What type of alcohol monitoring was ordered for probation terms? Select all that apply.

- IID (1)
- In-home alcohol monitoring (2)
- UA/BA (3)
- Other (please specify): (4) _____
- No alcohol monitoring ordered/documentated in record (5)

Display This Question:

If What type of alcohol monitoring was ordered for probation terms? Select all that apply. = IID

Q22 If provided, what was the date of the order of removal for the IID if ordered as a condition of probation?

	Month	Day	Year
Please Select: (1)	▼ January (1) ... December (12)	▼ 1 (1) ... 31 (31)	▼ 1900 (1) ... 2049 (150)

Display This Question:

If Disposition (Select All That Apply) = Fines

Q23 If fines were a term of disposition, what was the total amount? _____

Q24 Describe other DWI offenses. (Note: Do not enter the current case being entered.)

	Case Number (1)	Offense (2)	Offense Date (3)	Disposition Date (4)
Offense 1 (1)				
Offense 2 (2)				
Offense 3 (3)				
Offense 4 (4)				
Offense 5 (5)				
Offense 6 (6)				
Offense 7 (7)				
Offense 8 (8)				
Offense 9 (9)				
Offense 10 (10)				
Offense 11 (11)				
Offense 12 (12)				
Offense 13 (13)				

Q25 I need someone to review this case.

- Yes (please explain) (4) _____
- No (5)

Q26 Comments

End of Block: Default Question Block