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Blow and Go: The Breath-Analyzed Ignition Interlock Device as a Technological Response to DWI

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ABSTRACT

Driving while intoxicated rates have declined substantially in the last 20 years. This is as a result of public opinion combined with increased law enforcement efforts. A recent tool has been the Breath Analyzed Ignition Interlock Device. This new technology is designed to prevent persons with excessive blood alcohol levels from operating the interlocked vehicle. This 3-year recidivism study of the ignition interlock revealed 17.5% recidivism rates for the interlock group compared to 25.3% recidivism rates for the non-interlock group, a 31% decrease. Multiple offenders and younger (under 30) offenders had significantly lower rates of subsequent arrests. The multi-offenders in the comparison group were more than twice as likely as the interlock group to have a subsequent conviction within 3 years. The difference was nearly the same for the under 30 age group. There was almost no difference for first offenders. Accordingly, the ignition interlock appears to significantly reduce

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recidivism for repeat and younger DWI offenders but offers almost no improvement for first offenders. One driver of 315 (0.32%) was charged with DWI with an interlock in place. This offender had a child provide the breath sample while she drove the vehicle.

Key Words: Drunken driving; Ignition interlock; Recidivism.

BACKGROUND

In the last two decades, the crime of driving while intoxicated (DWI) has been one of the most visible of criminal or traffic related offenses. For many years, until the 1980s, the violation of laws prohibiting the operation of motor vehicles while under the influence of alcohol was not pursued with the same degree of enthusiasm with which they are at the present.

The activist organization, Mothers Against Drunk Driving (MADD), was formed in 1980 as a part of a grassroots campaign to get impaired drivers off of the roadways of America (1). Citizen involvement by groups such as MADD and others resulted in campaigns to increase the minimum drinking age in states that permitted drinking under the age of 21, passage of "dramshop" laws that make sellers of alcohol liable for damages sustained by persons injured by drunk drivers, and programs to make the public more aware of the dangers of driving under the influence (2).

This groundswell of public opinion worked in tandem with legislative reforms to produce significant decreases in alcohol-related crashes. In fact, the public opinion campaign is thought to be so important and effective, that it, in and of itself, should be viewed as an intervention completely separate and apart from the legislative enactments that changed the law and procedure of DWI/DUI offenses in the early 1980s (1).

The United States Department of Justice, Bureau of Justice Statistics, reports a substantial decrease in the DWI arrest rate. The arrest rate per 100,000 drivers fell from 1124 in 1986 to 809 in 1997 (3). This is an impressive decline of 28% in a little over a decade (see Table 1). Thus, it may appear that there has been a positive cumulative effect from a combination of the changing social and cultural climate regarding drinking and driving and the increased attention from law enforcement and the courts.

Much of the public opinion regarding drunken driving mentioned above has supported a "get tough" approach to handling DWI cases. In keeping with this sentiment, the number of persons in jail, prison, or on probation for DWI has increased from 270,100 in 1986 to 513,200 in 1997 (3).



Table 1. DWI arrest rates.

Year	Licensed drivers	Arrests for DWI	Rate of arrest per 100,000 drivers
1986	159,486,000	1,793,300	1,124
1987	161,816,000	1,727,200	1,067
1988	162,854,000	1,792,500	1,101
1989	165,554,000	1,736,200	1,049
1990	167,015,000	1,810,800	1,084
1991	168,995,000	1,771,400	1,048
1992	173,125,000	1,624,500	938
1993	173,149,000	1,524,800	881
1994	175,403,000	1,384,600	789
1995	176,628,000	1,436,000	813
1996	179,539,000	1,467,300	817
1997	182,709,000	1,477,300	809
Change (%)	14.6	-17.6	-28.0

Table taken from Ref. (3), citing FBI, crime in the United States (1986-1997), and Federal Highway Administration, Highway Statistics (1986-1997).

TECHNOLOGICAL RESPONSE TO DWI OFFENSES

The handling of cases involving driving under the influence has become increasingly dependent on technology. Examples include the use of blood and breath tests to establish impairment. The level of alcohol in the system has been measured in terms of blood-alcohol content (BAC). Two pioneer studies that examined the relationship between BAC and its relationship to automobile crashes were the Manhattan Study and the Grand Rapids Study. The Manhattan Study found that alcohol increased the risk of a fatal vehicular crash (4). The Grand Rapids Study produced the "relative risk curve," which predicts the increased likelihood of being involved in an automobile crash at increasing BAC levels (5).

Persons can be, and often are, found guilty of DWI without scientific evidence of the person's BAC through testimony of eyewitnesses who provide evidence of the defendant's demeanor, physical appearance, speech patterns, and driving skill. However, this evidence will often not be enough in close cases where the defendant is not obviously under the influence of alcohol. As a result, courts began to rely on objective scientific evidence of impairment.

Blood-alcohol content is measured in milligrams of ethanol per milliliters of whole blood. Until recently, most states had laws establishing the BAC level of 100 mg of ethanol per 100 mL of whole blood (0.10 g/dL) as



the point at which an individual is incapable of safely operating a motor vehicle. However, it has been reported that even low-dose BAC's (under 0.05) will impair the visual perception, acuity, and complex reaction times of subjects (6). Thus, it could be argued that there is no "safe level" of alcohol in one's system in terms of safely operating motor vehicles. In response to this factor, many states have reduced the "guilty per se" limit to a BAC of 0.08. The federal government has encouraged this change by making the availability of certain highway funding contingent on moving to this lower BAC limit.

Early scientific tests for determining BAC were based on venous blood samples. Alcohol found in the breath of subjects was found to correlate to levels found in venous blood, and the National Safety Council Committee on Alcohol and Drugs recommended the use of breath testing in impaired driving cases in 1953 (6).

The Breathalyzer was developed for use by law enforcement by Robert Borkenstein in 1954. This machine measures the BAC of persons based on breath samples. Because the taking of breath samples is much less intrusive and expensive than sampling blood, the breath test soon became the accepted method for establishing the blood-alcohol level of suspected drunk drivers (7). There are presently several machines that provide breath analysis for law enforcement agencies on the market.

In addition to the use of modern scientific technology for evidentiary purposes, technology may also be used in such a manner as to prevent offenses. Such preventive technology has been considered since before 1970 (8,9). This preventive technology seeks to fill the quest for a "car that drunks can't drive" (8,10).

Early devices included locking systems that required the driver to enter a numerical code in the proper sequence before the vehicle would start. This, and other exercises, called critical tracking tasks (CTT), met with only limited success. In-vehicle breath testing was initially found to be impractical due to concerns over reliability and circumvention. Eventually, the technology of breath testing improved and was found to be reliable (11). But circumvention remained a problem (7). Some methods of circumventing the interlock included giving stored breath samples. When features that reduced the possibility of cheating were introduced, the modern breath-analyzed ignition interlock device emerged. Now, the most frequent method of "circumvention" by offenders is the operation of a vehicle that is not equipped with the interlock (12). The interlock device itself is not circumvented, but the court order requiring the use of the device is violated.

This device is installed in the ignition system of a motor vehicle. An interlock device typically uses a handheld unit connected by a wire to



the analyzer unit mounted under the dash (7). The driver must give a breath sample that does not have the presence of alcohol in excess of a predetermined threshold amount. An excessive amount of alcohol in the driver's breath sample will prevent the ignition system from starting the vehicle. A "fail" BAC level will prevent the vehicle from being started for a predesignated time, usually 30min. The ignition interlock will not prevent a person from drinking, nor will the device prevent a person from driving. But it will prevent one from drinking and driving in a particular vehicle. It has been observed that the ignition interlock is "designed to control the intersecting risk behaviors (drinking and driving) rather than either behavior separately" (13).

The ignition interlock is typically required as a part of an offender's sentence as imposed by the trial judge following a conviction for driving under the influence of alcohol. The offender is under court order not to drive any motor vehicle that is not equipped with an interlock system. The interlock system can also be programmed to require subsequent breath samples, called "rolling re-tests," which are used to deter an impaired driver from attempting to get his or her vehicle started with the aid of a sober person. If not for this feature, a person under the influence of alcohol could have a friend provide the initial sample to get the car started and then drive to his or her desired destination. The driver must continue to give breath samples even while the vehicle is in motion. A failure of the test while the vehicle is in motion does not cause the vehicle to stop for safety concerns. A retest failure causes the lights to flash and the horn to honk until the driver stops the vehicle. At that point, the vehicle is shut down and will not start again until such time as a "passing" breath sample is provided. These retests should also deter a driver from consuming alcohol while driving. The ignition interlock system records data of all tests and is downloaded at periodic intervals by technicians.

Studies have shown that the ignition interlock is effective in reducing recidivism rates among persons who have an interlock device in their vehicle (14). The Beck study conducted in Maryland reported that offenders in interlock programs have reduced their risk of being involved in an "alcohol traffic violation" within 1 year (13).

A 30-month longitudinal study of the interlock and its effect on recidivism in Ohio showed that a group of drivers who were sentenced to drive with an interlock device experienced a 65% decrease in the probability of a subsequent drunken driving arrest than a comparison group that was not required to use the interlock (15). The ignition interlock has been described as having an educational component in that it "requires the driver to change life habits related to drinking and driving" (16). It may also include rehabilitative features. The machine provides instant feedback to the offender. If one has consumed enough alcohol to exceed the preset BAC limit, then the vehicle



will not start. This feature gives the offender the chance to learn how much alcohol consumption is unacceptable prior to driving (10,16).

This study will examine whether the ignition interlock results in a reduction in subsequent convictions of persons convicted of DWI in one court jurisdiction. It will also consider both the deterrent and rehabilitative effect of the interlock as a part of DWI sentences.

STUDY METHODOLOGY

Greene County, Arkansas, is a rural community in Northeast Arkansas with a population of approximately 35,000. Craighead County is an adjoining county with a population of approximately 75,000. Both counties have experienced significant growth in population and industry in recent years. The county seats of each county are only 20 miles apart and are in the same judicial circuit. According to Census 2000 of the U.S. Census Bureau, Greene County is 97% white, 69.5% of its residents are 21 years of age or older, and 72.6% reside in family households. Craighead County is 89.3% white, 69.5% 21 years of age or older, and 68.4% reside in family households.

To evaluate the effectiveness of the interlock system, court records in Greene County were examined to determine the identities of all cases of DWI for the first 14 months of the program (May 1, 1995 through June 30, 1996). This group included 315 offenders. From this group of 315 offenders, a total of 178 actually installed an interlock device on their vehicle. Of the 137 persons who failed to comply, many had no vehicle and made other arrangements for transportation. We must realistically presume that some were driving non-interlock-equipped vehicles. However, all will continue to have the requirement of an interlock device as a restriction on their license until such time as this requirement is completed.

A comparison group of 6 months of offenders in adjoining Craighead County was then identified. This time frame was January 1, 1996 through June 30, 1996. This group was made up of 312 persons. The study population consisted of all DWI offenders in the two courts for the applicable time periods. The Office of Driver Control of the State of Arkansas provided the driving history of all persons in the experimental and comparison groups for a period of 3 years after their conviction dates.

The treatment group subjects were required to use the interlock for time periods of either 6 or 12 months. The 3-year study period provides for examination of recidivism following the removal of the interlock from the subject's vehicle. One criticism of other studies of the ignition interlock is that most only examine recidivism during the time that the interlock is actually in



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the offenders' vehicle (14). Inasmuch as treatment subjects were required to use the interlock for 6-12 months and their driving and criminal records were examined for 3 years following the installation of the interlock, this study has the benefit of at least 2 years of rearrest history after the removal of the device.

The interlock provider for Greene County offenders also reviewed data obtained from interlock devices regarding the blood alcohol level found in breath samples of interlock clients for the time frame from which Greene County offenders were selected.

LIMITATIONS OF STUDY

This study must be viewed as being somewhat limited. Readers are cautioned regarding generalizing data on a nationwide basis due to the fact that this project contains a small study population. The study also suffers from a similar problem for which other studies have been criticized; it is not based on a random experimental design (16). However, an experimental design will be difficult to achieve because most judges will be reluctant to assign offenders randomly to the interlock device. The interlock is, in and of itself, a substantial penalty. Judges will not want to impose this punishment on a random basis, which punishes half of the offenders in this manner while not punishing the other half on the basis of nothing more than the luck of when their case was docketed. Judges strive for fairness in sentences, believing that similarly situated persons should be treated in a similar manner. The random assignment of this form of punishment runs contrary to this principle. When judges impose a treatment procedure as a part of a sentence, they do not want to withhold this component of the sentence on pure random chance.

The differences in experimental and control groups could be addressed in future studies by assigning 100 consecutive subjects to an experimental group and the next 100 consecutive subjects to a control group. This method of group assignment may be more acceptable to a sentencing judge than pure random assignment.

FINDINGS

Recidivism Rates

The experimental group of DWI offenders who were required to drive only when using the interlock device experienced a lower rate of DWI recidivism than did the comparison group. Of the 315 offenders in the Greene

*Table 2.* Three-year recidivism rates by group.

	Interlock group	Comparison group
Total DWI offenders	312	315
Total offenders with DWI within 3 years (%)	55 (17.5)	79 (25.3)

County experimental group, 55 (17.5%) were convicted of a subsequent DWI within 3 years. The control group of 312 offenders whose group was not exposed to the ignition interlock produced 79 (25.3%) offenders who had subsequent DWI convictions within the 3-year follow-up period (see Table 2).

This is a 31% decrease in recidivism rates after 3 years for the interlock group subjects. What is the measure of association between the independent variable of interlock use and the dependent variable of recidivism? The two variables produce a Phi of only 0.096, which must be described as a weak to moderate relationship.

Length of time for use of the interlock had no effect on recidivism. As mentioned above, some offenders were required to drive with the ignition interlock for a period of 6 months, whereas others were sentenced to an interlock term of 1 year. The 6-month interlock users and 12-month interlock users had almost identical recidivism rates. This could be attributed to the fact that 12-month interlock users tended to be offenders who were convicted of multiple DWI offenses, a group that may be more difficult to reach through treatment or punishment.

Survival Rates

The subject groups were followed for 3 years subsequent to their offense dates for the purpose of comparing survival data. For the interlock group, 4.1% of the subjects had been charged with another DWI offense at the end of 6 months, compared to 8% of the control group subjects. Thus, the interlock group had a 6-month survival rate of 95.9%, whereas the control subjects had a 92% survival rate at this point. At 1 year, the interlock group had a 92.4% survival rate compared with 85.3% rate for the control group. At 18 months, the survivors were 88.9% for the interlock subjects and 80.8% for the control group offenders. This point marked the largest spread between the two groups. After 24 months, 85.4% of the interlock group remained free of additional DWI charges compared to 78.2% of the control subjects. At 36 months, the gap narrowed to 81.3% of the 1995-1996 interlock group surviving 3 years



without subsequent DWI charges compared with 74.7% of the Craighead County control group.

The 1995-1996 interlock group had higher survival rates at all time periods. Both groups showed declining survival rates with the lowest being at the 3-year mark. It is noteworthy that the spread between the two groups increased with the passage of time, peaking at a difference of 8.1 % points after 18 months. Even a year or more after the device is removed, subjects were exhibiting continued reductions in reoffense rates. However, the difference between the two groups declined sharply at the 24- and 36-month intervals. This may indicate lessening long-term benefit of the interlock, with the increased passage of time after removal of the device (see Table 3).

Compliance with Interlock Requirement

As mentioned previously, of the 315 cases in 1995-1996 where the offenders were ordered to install an interlock in their vehicle, 178 of the offenders complied with the court's order and 137 did not comply. Thus, only a little more than half (57%) completed the interlock requirement of their sentence. This compliance rate is consistent with that found in the Maryland study by Beck, Rauch, and Baker (13). Those who did not comply with the interlock requirement will continue to have the requirement of an interlock as a restriction on their driver license until such time as they have completed this part of the sentence.

Any reduction in future offenses is desirable. However, the overall recidivism rate for the interlock subjects is not substantially better than the non-interlock group. As noted above, the recidivism rate for the interlock group was 17.5% compared to the comparison group rate of 25.3%, with a Phi of 0.096 and a significance level of 0.016, indicating a weak to moderate relationship. However, when we control for whether the interlock group

Table 3. Survival rates by group.

Time (months)	Interlock (W = 315)(%)	Comparison (N = 312)(%)
6	302 (95.9)	287 (92)
12	295 (92.4)	266 (85.3)
18	284 (88.9)	252 (80.8)
24	273 (85.4)	244 (78.2)
36	260(81.3)	233 (74.7)



subject is a first offender or a multiple DWI offender, the differences become more pronounced. First offenders experienced a 17.2% recidivism rate for interlock group, compared to a 21.1% recidivism rate for the comparison group. The Phi value is 0.048, indicating a weak relationship. This, of course, is an improvement, but not substantial. In contrast, the multiple offenders in the interlock group had a reoffense rate of 18.1%, whereas the non-interlock group had a recidivism rate of 36.9%. The Phi value for the multioffender variable was 0.211, indicating a moderate to strong relationship. The multioffenders in the group not subjected to the interlock were more than twice as likely to have a subsequent DWI conviction within 3 years than the repeat offenders who were subject to the interlock requirement. This suggests that the interlock may be most effective when selectively used (see Table 4).

Controlling for age of the offender also produced interesting results. Offenders under 30 years of age showed much greater improvement in recidivism rates than did the over 30 offenders. The interlock group under age 30 experienced a recidivism rate of 12.2% compared to an under 30 comparison group rate of 23.3%. The interlock group subjects over 30 had a recidivism rate of 19.8%. The over 30 comparison group members exhibited a recidivism rate of 27.1% (see Table 5).

Selective use of the interlock appears to produce much more substantial results than across-the-board use. Offenders under 30 years of age in the non-interlock group had nearly twice the recidivism rate than the interlock group members in the same age group. The most important variable is prior DWI history. The offenders who had previously been convicted of DWI in the interlock group were less than half as likely to receive another DWI within 3 years than the multioffenders in the non-interlock comparison group. The Phi

Table 4. Three-year recidivism rates by offense level.

	Interlock group	Comparison group
Total DWI first offenders	232	228
First offenders with DWI within 3 years (%)	40 (17.2)	48 (21.1)
Total DWI multioffenders	83	84
Multi offenders with DWI within 3 years(%)	15 (18.1)	31 (36.9)
Symmetric measures		
Offense level	Value	
First offender Phi	0.048	
Multi offender Phi	0.211	



Table 5. Three-year recidivism rates by offender age.

Subsequent conviction	Interlock (%)	Comparison (%)
Under age 30	12.2	23.3
Over age 30	19.8	27.1
Symmetric measures		
Age	Value	
Under 30 Phi	0.138	
Over 30 Phi	0.086	

value for the multiple offender variable (0.211) was much stronger than the value for the under 30 years of age variable (0.138).

Deterrent Effect

One of the traditional purposes of punishment is deterrence. Deterrence rational choice theory is at least partially based on economic perspective of criminal behavior. The would-be offender is presumed to make a calculation, which weighs the potential benefit that may be gained from the contemplated criminal act against the potential cost if the person is caught and punished. The "cost" of criminal behavior may be increased by making greater the likelihood of detection and punishment (2). The cost of criminal behavior is increased by enhancing the punishment. This punishment may include fines, incarceration, public service work, treatment requirements, license suspension, probation supervision, and other sentencing provisions, which may include the use of an ignition interlock device. This punishment goal can be directed toward the individual offender in the form of specific deterrence or to society as a whole in the form of general deterrence (17). Deterrence is limited by low rates of detection. Low detection rates regarding drunken drivers is also a serious limitation in measures of recidivism based on rearrest rates (10).

Incapacitation

The ignition interlock also uses another of the traditional purposes of punishment, incapacitation. The ultimate form of incapacitation, in



non-capital punishment, is incarceration. Jail sentences are totally effective in preventing the offender from driving under the influence of alcohol while the person remains incarcerated. As mentioned above, studies have shown that incarceration has little deterrent effect on future violations. Another form of incapacitation is license suspension.

A device such as the interlock is a form of partial incapacitation. The offender is partially incapacitated in that his vehicle is rendered functionally inoperable if the offender, or any person, attempts to start the vehicle with a prohibited breath alcohol level.

Routine Activities Theory

Society's mobility subsequent to World War II is noted to be related to crime and criminal activity. Cohen and Felson's (18) "routine activities theory points to "... the convergence in space and time of the three minimal elements of direct-contact predatory violations: (1) motivated offenders, (2) suitable targets, and (3) the absence of capable guardians against a violation." (p. 589). Drunken driving is always potentially predatory, given the likelihood of injury to persons or property. It thus appears that drunken driving could be examined in the context of this theory. The offender (a person under the influence of alcohol and in control of a motor vehicle) meets in time and place with a victim (any member of society or their property in the path of the offender) in the absence of a capable guardian (anyone or anything that can stop the offender).

Routine activities theory ignores the motivation of criminal offenders. The theory assumes that certain persons are motivated to commit offenses and will do so if they meet with a target and there is no one or nothing to stop them. A person who has been convicted of DWI is such an offender. In fact, it could be said that the DWI offender is quite predisposed to commit this offense. The vehicle is not the target of the offense but, rather, is the tool for the commissions of the offense. As stated above, the victim is any member of society, or their property, who gets in the way of the impaired driver. The interlock becomes the capable guardian. The interlock is an example of "opportunity blocking." It is similar to antitheft devices installed in vehicles (19). The major distinction between such devices and the interlock is that the crime-preventing device is installed in the vehicle of the potential offender instead of that of the potential victim.

The ignition interlock is a very capable guardian. As mentioned above, the interlock was extremely effective in preventing drivers from operating the interlocked vehicle while intoxicated. One driver of 315 (0.32%) was charged



with DWI with an interlock in place. This offender had a child provide the breath sample while she drove the vehicle. This incident is the only time in over 5 years in the subject jurisdiction that an offender has been discovered driving under the influence with an interlock device in place.

This incident underscores the fact that the interlock is effective but still imperfect. Other possible scenarios include the fact that an offender can drive a vehicle that is not equipped with an interlock. The offender is legally constrained, but not physically restrained, from driving another vehicle that is not equipped with an interlock. A household with more than one vehicle will not be required to install the interlock in all of the family vehicles. In addition, being a mechanical device, it may be possible to circumvent the system in some manner (13).

The provider of interlock devices (a private contractor) in the subject jurisdiction reviewed the data retrieved from the company's client base for the period of July 1, 1995 through June 30, 1996. The interlock devices were all set to prevent the operation of a vehicle if the driver's blood-alcohol level (BAC) exceeded 0.025%. Interlock unit reports indicate that the subjects were prevented from driving with a BAC in violation of the state's then-current illegal per se limit of 0.10% a total of 90 times. Another 33 starts at the 0.08% BAC level (the present legal limit) were also prevented.

Punishment in General

The interlock may be viewed as an additional sentencing option, which has a specifically deterrent effect on the offender. It may also be viewed as rehabilitative, or at least educational, in that it provides instant feedback to the offender whether an excessive amount of alcohol has been consumed to safely operate a motor vehicle. It is certainly a form of incapacitation, in that the offender is limited in what he or she can do with regard to operating the interlock-equipped vehicle. It also may satisfy that basic societal urge to get revenge on lawbreakers. The DWI sentences may include incarceration, public service work, treatment or counseling, probation supervision, license suspension, and alternatives such as the ignition interlock. All of these sentencing components, individually or collectively, cover each of the four basic punishment goals. The interlock may be viewed as another reasonable form of punishment, which covers each of these four traditional sentencing goals.



Other Intervening Factors

Are there other factors that may have played a part in this reduction in recidivism rates, particularly among repeat offenders? State law mandates alcohol education or counseling. As such, these services were provided to offenders in both jurisdictions. Moreover, the program was delivered by the same source, and subjects in both groups were provided the same program. A review of court sentences indicates that the court's sentences were similar in both groups. First offenders typically were sentenced to public service work in lieu of incarceration. Second offenders were usually sentenced to serve 10 days in jail. Third offenders were normally sentenced to serve a mandatory minimum of 90 days in jail. However, in Greene County, third offenders typically were sentenced to a 6-month jail sentence, twice the normal sentence used in Craighead County. It is possible that the stiffer jail sentence in Greene County could be associated with the lesser rate of recidivism found in Greene County. But it must be recognized that jail has not been found to have a significant deterrent effect. As stated above, all offenders were sentenced to some form of treatment based on recommendations of a presentence screening report. All offenders had additional jail time suspended on the condition that the other requirements of their sentence be completed.

There was also a difference in fines and court costs from the control group and the experimental group. Fines in Craighead County were normally \$500 for first offenders, \$1500 for second offenders, and \$2500 for third offenses. Court costs ranged from \$300 to \$340. In 1996, fines, in Greene County for DWI, were normally \$500 for a first offense; \$750 for a second offense; and \$1000 for a third offense. Court costs were set at \$325. Thus, Greene County used more jail time in some sentences and Craighead County used higher fines. In both courts, persons were permitted to perform public service work for credit toward fines if they were financially unable to pay fines. Both jurisdictions had the benefit of probation services to monitor offender compliance regarding the specific terms of their sentences.

Judicial Response

Members of the Arkansas District Judges Council were surveyed regarding their usage of the ignition interlock device at an annual meeting in May 1999. Thirty-seven judges participated in the survey. Thirty percent indicated that the interlock was available for them to use as a part of a DWI sentence. Sixty-eight percent of respondents stated they do not use the interlock as part of their DWI sentences. Twenty-two percent of the judges



make use of the interlock as part of their sentences. Of those judges who do not use the interlock, 53% stated the primary reason was that the cost to the offender was prohibitive; 36% did not know how to arrange for the use of the device; and 12% said they believed the device was ineffective.

CONCLUSION

The breath-analyzed ignition interlock device is an example of a technological response to a technological problem. The problem is that the technology of the modern automobile in the hands of an impaired driver has created a serious danger to society. The technological response is to render the vehicle inoperable for a driver with a proscribed amount of alcohol in his or her system.

The ignition interlock device is not a perfect response, but it may be viewed as appropriate in certain cases. The sentencing judge must weigh the relevant factors. The interlock may be a burden on other family members who may have to share an interlock-equipped vehicle with an offender. It may also be a financial hardship on some offenders and their families. However, the device may also prevent numerous alcohol-related motor vehicle crashes. It provides both incapacitative and rehabilitative functions. The device is also a new approach to the concept of target hardening.

Although there is a difference in recidivism rates between the experimental and control groups, comparing these rates for all offenders, there was not a clear statistical relationship between the two. But the study demonstrates that recidivism is decreased significantly for multiple offenders who are required to drive with the interlock. Multiple offenders who are ordered to use the interlock are less than half as likely to have a subsequent conviction for drunken driving over a 3-year period. This decrease in subsequent violations has been shown by this study to continue even after the removal of the interlock device. In view of the foregoing, especially when applied to multioffenders, the breath alcohol ignition interlock device appears to be an effective tool in the prevention of drunken driving.

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