

# **THE HARD CORE DRINKING DRIVER: PREVENTION PROGRAMS**

## **BACKGROUND**

Prepared by:

Traffic Injury Research  
171 Nepean St., Suite 200  
Ottawa, Ontario

Prepared for

Canada Safety Council  
1020 Thomas Spratt Place  
Ottawa, Ontario

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## TABLE OF CONTENTS

THE HARD CORE DRINKING DRIVER .....	1
A TIERED-BAC SYSTEM .....	3
IDENTIFYING AND ASSESSING THE HARD CORE.....	4
TREATING AND REHABILITATING THE HARD CORE .....	6
ADMINISTRATIVE LICENCE SUSPENSION .....	7
INCARCERATION .....	10
ELECTRONICALLY MONITORED HOME CONFINEMENT .....	12
INTENSIVE SUPERVISION PROBATION.....	14
ALCOHOL IGNITION INTERLOCK.....	15
ADMINISTRATIVE VEHICLE IMPOUNDMENT .....	19
SUPPLEMENTAL READING .....	21

## THE HARD CORE DRINKING DRIVER

*Hard core drinking drivers* are also referred to as “chronic drunk drivers”, “DWI repeat offenders”, “persistent drinking drivers”, “high-BAC drivers” and “alcohol abusing drivers”. Regardless of the label used to describe them, they have several notable characteristics:

- ◆ they tend to drink frequently and often to excess;
- ◆ they repeatedly drive after drinking;
- ◆ when they drink and drive, they usually have very high blood alcohol concentrations (BACs) – i.e., BACs of .15 and above, or nearly double the legal limit of .08;
- ◆ many have been previously convicted of an impaired driving offence;
- ◆ they appear to be resistant to traditional, educational, persuasive and emotional appeals; and
- ◆ they are not deterred by the threat of criminal sanctions.

The reason for the concern and focus on the “hard core” drinking driver is simple – they are the single most significant threat where alcohol and road crashes are concerned. Research has shown that hard core drinking drivers account for only 1% of all drivers on the road at night on weekends, but nearly half of all the fatal and dangerous crashes at that time. They also account for almost one-third (27%) of all fatally injured drivers and about two-thirds (65%) of all fatally injured drivers who have been drinking (Simpson and Mayhew 1990).

Although research has also shown that drinking-driving fatalities have declined over the past decade in Canada, there has been no change in fatalities involving hard core drinking drivers (Simpson et al. 1996).

Given the magnitude and persistence of this problem, innovative programs and policies are needed to prevent the “hard core” from driving, or from driving if they have been drinking. Dealing effectively with the problem in the long term will require a variety of tactics that acknowledge its complexity and resistance. Ultimately, such a comprehensive approach will include: primary prevention measures such as server training and responsible hosting to reduce the likelihood that an individual will actually drive after drinking; secondary prevention programs such as enhanced enforcement to remove hard core drinking drivers from the highway before they cause harm; and tertiary prevention programs to

help ensure those who have been apprehended for a drinking driving offence do not repeat it.

The greatest immediate need and priority is for programs and policies targeted at the offender. This is a priority because the DWI system is overloaded and much of the burden is due to “hard core” repeat offenders who constitute about two thirds of all convicted impaired drivers. Improvements can be made in all areas of processing and sanctioning offenders and include: a tiered-BAC system to target the hard core with appropriate programs; assessment to determine the relevant sentencing options; treatment to address their alcohol-related problems; sanctions targeted directly at the offender, such as administrative licence suspension and home confinement; and sanctions directed at the offender’s vehicle such as impoundment and alcohol ignition interlocks, to restrict or prevent the hard core offender from driving or from driving if they have been drinking.

Simpson, H.M. and Mayhew, D.R. (1990). *The Hard Core Drinking Driver*. Ottawa, Ontario: Traffic Injury Research.

This report was the first to provide convincing evidence that a significant portion of the drinking and driving problem involves individuals who repeatedly drive after drinking, especially with high alcohol concentrations (BACs). It described what is known about such individuals and provided a preliminary review of what programs and policies seem best suited to deal with the hard core drinking driver.

Simpson, H.M., Mayhew, D.R., and Beirness, D.J. (1996). *Dealing with the Hard Core Drinking Driver*. Ottawa, Ontario: Traffic Injury Research.

This report re-examined the problem of the hard core drinking driver and showed that there had been virtually no change in the magnitude of the problem in the six years since the initial study. The report also provided contemporary information on a variety of measures that offer promise for dealing efficiently and effectively with hard core drinking drivers.

## A Tiered-BAC System

It is widely acknowledged that drivers with high BACs (e.g., two to three times the legal limit) pose a very significant threat on the highways. It is also true that drivers with high BACs are more likely to be, or become, repeat offenders.

This means that considerable attention should be paid to the driver's BAC at the time of arrest; driver's with high BACs should be treated differently in terms of the type and severity of sanctions applied to them. This is the basis of an increasingly popular approach called a tiered-BAC system. In such a system the offender's BAC is a trigger for various administrative, criminal and/or punitive actions. Higher BACs, for example, BACs of .15 or .20 and over, result in higher fines, longer imprisonments, mandatory treatment, longer license suspensions as well as technological measures (e.g., alcohol ignition interlocks).

The safety impact of tiered-BAC systems is not yet known because no impact evaluation has been done. However, systems that are in place, for example, in Europe and Australia, appear to work efficiently from an operational perspective (Simpson and Mayhew 1990; Simpson et al. 1996). Moreover, the rationale for a tiered-BAC system is sound because it acknowledges the fact that high BACs represent a much more significant threat to public safety and the fact that drivers with high BACs are more likely to repeat the offence.

Simpson, H.M. and Mayhew, D.R. (1990). *The Hard Core Drinking Driver*. Ottawa, Ontario: Traffic Injury Research.

Section 6.2.2 of this report discussed the merits of graded or multi-tiered BAC limits for high-BAC drivers. It also provided examples of such systems outside North America.

Simpson, H.M., Mayhew, D.R., and Beirness, D.J. (1996). *Dealing with the Hard Core Drinking Driver*. Ottawa, Ontario: Traffic Injury Research.

Section 3.1 of this report discussed the rationale for tiered-BAC systems and described tiered-BAC systems in practice as well as systems that have been proposed but not yet implemented. It also provided recommendations regarding the characteristics that could serve as guidelines for the development of an effective tiered-BAC system.

## Identifying and Assessing the Hard Core

To supplement a tiered-BAC system, or even as an alternative to it, a more elaborate assessment should be considered to identify the hard core drinking driver and the precise nature of their dependency and psycho-social problems. This will increase the likelihood that the appropriate measures are applied to the offender. Assessment, or at least some type of screening, should be required of all DWI offenders, or at least repeat offenders and first offenders with high BACs -- i.e., those most likely to be harmfully involved with alcohol and at greatest risk of committing a subsequent DWI offence.

Assessment should depend upon valid and standardized instruments and techniques to determine the nature and extent of an offender's problems. Offenders should be required or encouraged to complete the assessment process during the early stages of their license suspension, so that they can commence and complete the recommended rehabilitation program(s) prior to license reinstatement.

Current assessment practices are extremely diverse and few efforts have been made to evaluate their effectiveness in reducing the rate of recidivism or the number of alcohol-related crashes among convicted impaired drivers. However, research shows that more intensive assessment programs do have a beneficial impact in reducing recidivism and facilitate participation in treatment – i.e., many program participants subsequently attend and complete recommended treatment programs (Siegal 1985; Huebert 1990; Moore 1989). These programs also appear to have a general positive effect on attitudes, knowledge and behaviour. This suggests that the process of intensive assessment can have a beneficial effect on alcohol use, even in the absence of formal treatment.

Huebert, K. (1990). *IMPACT: Measuring Success*. Edmonton, Alberta: Alberta Alcohol and Drug Abuse Commission (AADAC).

Prior to 1985, AADAC offered only a one-day impaired driving program (AIDC) aimed at all persons convicted of impaired driving. Since 1985, an intensive weekend alcohol and drug intervention program called IMPACT has been run by AADAC. The goal of this intense program is to let the participants gain insights into the consequences of alcohol and/or drug use and plan strategies for dealing with such consequences, thus reducing repeat impaired driving convictions. AADAC also conducts a one-day impaired driving program, Planning Ahead, aimed at first offenders. An evaluation of IMPACT showed a significant effect on recidivism.

Moore, D. (1989). *Factors Influencing Treatment Compliance Following Drunk Driver Intervention*. Dayton, Ohio: Wright State University. 219-24.

This study identified factors associated with an individual's decision to comply with a referral for follow-up substance abuse treatment, and suggested compliance models based on these results. Reporting on the Weekend Intervention Program, the basic premise of the study was that treatment compliance would be predicted by court actions. As well, the study also adopted a theoretical framework wherein an individual's increased awareness of a health problem or risk, coupled with a decrease in the barriers to treatment will be most likely to describe treatment compliance and subsequent changes in behavior.

Siegal, H. (1985). *Impact of Driver Intervention Program on DWI Recidivism and Problem Drinking*. Final Report. DOT HS 807 023. Washington, DC: U.S. Department of Transportation, National Highway Traffic Safety Administration.

This study compared the effects of a brief jail sentence, a suspended sentence/fine, or a therapeutic assessment intervention known as the Weekend Intervention Program on recidivism and alcohol-related crashes. The results showed that repeat offenders receiving the therapeutic intervention had lower recidivism rates than those not receiving it. For those receiving treatment, the more severe the participant's alcohol problem, the greater the chance of recidivating. These findings support continued confidence in assessment as an intervention program.

## Treating and Rehabilitating the Hard Core

An effective assessment should result in hard core offenders being directed to the most appropriate rehabilitation program. This is critical because so many of them are alcohol dependent – three of every four repeat offenders are harmfully involved with alcohol. So, the ultimate solution to the problem of impaired driving among such offenders lies in resolving the underlying condition(s) that give rise to, and perpetuate, the behaviour. Indeed, treatment must be a cornerstone of any successful strategy for dealing with the Hard Core.

A variety of treatment programs are needed since no one approach is effective for all offenders. Treatment should also not be restricted to addressing alcohol and substance abuse but include aspects of personality, attitudes, social adjustment and coping skills.

Research shows that treatment and rehabilitation programs can have a significant positive effect on recidivism and alcohol-related crashes. A recent meta-analysis of the impact of DWI rehabilitation programs found that on average, such programs reduced DWI recidivism and alcohol-related crashes by 7% to 9%, compared with no rehabilitation (Wells-Parker et al. 1995). Programs that combine approaches (e.g., education, counselling, and monitoring) have been found to be more effective than single approaches for both multiple and first-time offenders. This combining of approaches appears to increase the likelihood that at least one of the components will have an impact on a broad range of participants.

Treatment is vital to effective prevention, but it is a long-term process. Nor is it 100 percent effective. Consequently, it should be used in combination with other sanctions and not become a substitute for, or a means to circumvent them.

Wells-Parker, E., Bangert-Drowns, R., McMillen, D.L., and Williams, M. (1995). Final results from a meta-analysis of remedial interventions with drink/drive offenders. *Addiction* 90: 907-926.

This analysis of the effectiveness of remediation with drinking/driving offenders included 215 independent evaluations. Among studies with adequate methods, the average effect size for recidivism and alcohol-involved crashes was an 7%-9% reduction over no remediation. Combinations of approaches, in particular those including education, psychotherapy/counseling and follow-up contact/probation were more effective than other approaches for reducing drinking/driving recidivism.

## **Administrative Licence Suspension**

The removal of driving privileges -- i.e., licence suspension -- has become one of the principal sanctions for dealing with DWI offenders. The removal of driving privileges is a mandatory sanction in the Criminal Code of Canada for an impaired driving offence. And, this prohibition is significantly extended by a license suspension administered by the province/territories upon conviction. However, both these actions can only be taken upon conviction, which might not occur until months after the offence. In the meantime, the offender can still drive.

In recent years, a procedure known as administrative licence suspension has become popular because of its swiftness and certainty. It occurs immediately when a drinking-driving charge is laid and is independent of the criminal conviction.

Administrative license suspension typically empowers the arresting police officer to seize the licence of a driver who either refuses a test for alcohol or who fails the test. The officer issues a receipt for the license and sends it to the Motor Vehicle Department. The receipt serves as a temporary licence for a period of time (typically seven days) to permit the offender to make necessary arrangements for operating without a license.

Research shows that administrative license suspension has both specific and general deterrent effects (Stewart et al. 1989; Williams et al. 1991; Voas and Tippetts 1993) impacting not only the offender but deterring others from drinking and driving. For example, it has been shown to result in reductions in nighttime crashes from 3% to 14% (Ross and Gilliland 1991).

Despite the effectiveness of administrative licence suspension, it is not known whether this measure affects hard core drinking drivers. Moreover, a significant proportion of those with a suspended licence continue to drive. Although this does not negate the beneficial effect of licence suspension, its impact might be enhanced if all suspended drivers could be kept off the road, especially the hard core. To increase the impact of licence suspension, measures are needed to improve the detection of unlicensed drivers and a wider range of sanctions are needed to reduce the numbers who ignore their suspension.

Ross, H.L., and Gilliland, E.M. (1991). *Administrative License Revocation for Drunk Drivers: Options and Choices in Three States*. Washington, DC: AAA Foundation for Traffic Safety.

This study examined the working and safety effectiveness of administrative license revocation for drunk drivers in three states – Minnesota, Delaware, and New Mexico. Interrupted time-series analysis showed that these laws were effective in deterring drunk driving and reducing nighttime crashes in all three states.

Stewart, K., Gruenewald, P., and Roth, T. (1989). *An Evaluation of Administrative Per Se Laws*. Final report on grant 86-IJ-CX-0081. Washington, DC: National Institute of Justice.

Administrative license revocation laws provide swift and certain punishment for drunken driving offenders. The general deterrence effects of these laws have been documented. This study examined the specific deterrence effects of administrative license revocation. Recidivism rates of samples of drivers arrested for drunken driving were compared before and after the implementation of administrative license penalties in three states: Louisiana, Mississippi and North Dakota. Comparisons were also made with California, which did not have administrative license revocation at the time. Results indicated significant decreases in recidivism rates in Louisiana and North Dakota following the implementation of the administrative penalties. In Mississippi, while no decrease in drunken driving recidivism was observed, decreases in the rates of other traffic offenses did occur. In California, the comparison state, no significant changes in recidivism rates were observed during the study period.

Voas, R.B. and Tippetts, A.S. (1993). Are licensing sanctions effective at reducing impaired driving. Paper presented at National Transportation Research Board Meetings, January 13, 1993.

This paper reported a study designed to determine the proportion of DUI offenders who are unlicensed at any given time and the extent to which these offenders represent an increased risk on the road. The results showed that license suspension reduces overall crash involvement during the period of suspension. However, reinstated DUI drivers continue to have significantly higher crash rates than the average operator. The intervention involved in arrest, conviction and sanctioning for the offense seems to have had little effect on these high-risk motorists. To the extent that these offenders receive education and/or treatment programs, these programs are obviously failing to bring their driving behavior within the range of risk presented by the average driver. The high offense rate also suggested that greater control needs to be exercised over driving following reinstatement. The clear evidence that suspended drivers who are apprehended for driving while suspended have significantly higher crash involvement supports the trend to establish laws which provide for impoundment of the vehicle.

Williams, A.F., Weinberg, K. and Fields, M. (1991). The effectiveness of administrative license suspension laws. *Alcohol, Drugs and Driving* 7 (1): 55-62.

This paper reviewed the evidence for the effectiveness of administrative license suspension and concluded it is an effective way to reduce the problems caused by alcohol-impaired driving. Immediate administrative license suspension after arrest has many advantages over both discretionary and mandatory judicial suspension and should increase the application of this penalty and its positive effects. There is wide variation in administrative license suspension laws and some are likely to be more effective than others. Ways need to be identified and employed to make administrative license suspension laws more effective in promoting both specific and general deterrence.

## Incarceration

Incarceration is typically viewed as the most severe sanction and it is often advanced as the ultimate weapon for deterring repeat offenders. Indeed, in the past decade and a half, drunk driving has been portrayed as a serious crime that should be punished by incarceration and, as a consequence, even first time offenders in some jurisdictions face jail sentences.

Research shows, however, that there are limits to the effectiveness of jail terms. Long imprisonment – without other remediation -- has been shown to produce either no significant impact (Joksch 1988; Ross and Klette 1995) or, paradoxically, a higher number of future accidents and convictions (Homel 1988).

Very brief jail terms, however, appear to be effective with first-time offenders but it is not known whether this applies to hard core offenders (Compton 1986).

Given that long imprisonment has no impact on offenders, more-cost effective alternatives to traditional imprisonment should be considered.

Compton, R. (1986). Preliminary analysis of the effect of Tennessee's mandatory jail sanction on DWI recidivism. In: *Research Notes*. June. Washington, D.C.: National Highway Traffic Safety Administration.

The State of Tennessee adopted a first offense two-day mandatory jail sanction in 1982. This study attempted to determine its effect on recidivism. A comparison was conducted of recidivism rates for drivers convicted of DWI before jail was required for a first offense and drivers convicted of DWI after the new law mandating jail time for a first offense. The results show a dramatic drop in recidivism rates for the first 24 months following conviction for drivers convicted of DWI in 1983 (after the new law) in comparison to drivers convicted in earlier years. There appears to be a 40% reduction in recidivism from pre-law (1981) to post-law (1983) years.

Homel, R. (1988). *Policing and Punishing the Drinking Driver: A Study of General and Specific Deterrence*. New York: Springer Verlag.

This book is concerned with the impact of the criminal justice system on the behavior of drinking drivers and potential drinking drivers. The theoretical focus is the process of deterrence, the ways which random breath testing or punishments succeed or do not succeed in influencing the drinking and driving behaviors of motorists. This book contains the results of two empirical studies, one concerned with general deterrence, and one concerned with marginal specific deterrence, the study of whether heavy penalties imposed on convicted offenders in New South Wales are better

deterrents than light penalties. The evidence from this study showed that longer periods of imprisonment encourage reoffending, at least for drinking and driving.

Joksch, H.C. (1988). *The Impact of Severe Penalties on Drinking and Driving*. Washington, D.C.: AAA Foundation for Traffic Safety.

The objective of this study was to assess whether states introducing more severe sanctions had a greater reduction in drunk driving than others. It does not attempt to evaluate the effects of specific changes in the laws or their enforcement in specific states. As severe sanctions, this study included mandatory jail, mandatory community service, and loss of license without the possibility of getting occupational or restricted license, for first offenders. The analyses showed that although drunk driving declined in the 14 states studied, there was no indication that the decline was greater in states which had introduced more severe sanctions.

Ross, H.L., and Klette, H. (1995). Abandonment of mandatory jail for impaired drivers in Norway and Sweden. *Accident Analysis and Prevention* 27 (2): 151-157.

In 1988 and 1990, respectively, Norway and Sweden adopted legal reforms including abandonment of mandatory jail sentences for persons driving with BACs above specific limits. Interrupted time-series analysis showed that in both countries traffic deaths diminished simultaneously with the reforms, consistent with the understanding that Scandinavian success in reducing impaired driving does not depend upon mandatory jail.

## Electronically Monitored Home Confinement

As an alternative to jail, at least for offenders who do not pose a major risk to society, some jurisdictions are experimenting with home confinement and electronic monitoring. An offender assigned to home confinement is under court order to be at home during specified hours. Offenders may leave the house for pre-approved activities, such as to go to work, attend a treatment program, or perform community service. Home confinement is intended to be punitive and offenders are often monitored using electronic devices.

Electronic monitoring comes in two basic types: radio frequency and programmed contact. Both types are controlled by a central computer. Radio frequency monitoring uses a transmitter electronically connected to the telephone system and worn by the offender. Periodic contact is made via the computer and telephone system to ensure that the offender is complying with the pre-arranged schedule. With programmed contact monitoring, random telephone calls are made to the offender who must then identify himself to the computer.

Other home monitoring systems have also been developed whereby a computer calls probationers at random and instructs them to blow into an alcohol-breath test device installed in the offenders home. A camera also takes a picture of the individual blowing into the device to ensure the sample is obtained from the offender. Information from the breath test is relayed over the telephone to a computer that alerts authorities if the conditions of probation have been violated.

Research shows a 30% to 57% lower alcohol-related recidivism rate among DWI offenders who participate in a home confinement/electronic monitoring program (Jones et al. 1997). DWI offenders also appear to fare better in home confinement than do other types of offenders – i.e., they are less likely to have any negative contacts with the criminal justice system following release from the program (Baumer and Mendelsohn 1992).

Baumer, T.L., and Mendelsohn, R.I. (1992). Electronically monitored home confinement: Does it work? In: J. Petersilia, A.J. Lurigio and J.M. Byrne (eds.), *Smart Sentencing. The Emergence of Intermediate Sanctions*. (pp. 54-67). Newbury Park, CA: Sage.

This paper presented a review of the research on electronic monitoring. Electronic monitoring equipment first became commercially available in 1985. Since that time, the number of programs, the number of offenders being monitored, and the variety of target populations have expanded rapidly. The reason for the rapid adoption of this technology are largely

unrelated to knowledge about the operation or impact of electronic monitoring. Pressure to “do something” about prison and jail over-crowding as well as beliefs about technical infallibility have contributed to the growth of these programs. Electronically monitored home confinement is a politically-palatable concept that promises to solve difficult problems.

Jones, R.K., Lacey, J.H., Berning, A. and Fell, J.C. (1997). An assessment of alternative sanctions for DWI offenders. In: C.Mercier-Guyon (ed), *Alcohol, Drugs and Traffic Safety – T’97, Vol. 1*: pp. 63-72. Annecy, France: CERMT.

In this study, two alternatives to incarceration for DWI were evaluated using quasi-experimental designs. Recidivism rates for repeat DWI offenders receiving intensive supervision probation together with treatment, or in-home confinement together with electronic monitoring, were compared with offenders receiving the traditional jail sanction in Milwaukee, Wisconsin and Los Angeles County, California. After adjusting for other factors associated with recidivism, it was found that those offenders receiving the alternative sanctions experienced lower one-year recidivism rates than their comparison groups.

## Intensive Supervision Probation

Another alternative to lengthy imprisonment is intensive supervision probation. This differs from regular probation in that surveillance is more intensive, there is a higher availability of treatment services, and caseloads are smaller. The intent of the program is to reduce overcrowding in prisons by releasing less dangerous offenders and keeping them under tight enough control to protect public safety. For example, offenders could be required to report regularly (e.g., daily or weekly) to a monitor from the Probation Office to demonstrate that they have attended the recommended treatment program. Program monitors could also test for alcohol and drug use and provide counselling when necessary. Variation occurs between types of programs with some programs excluding drug and alcohol abusers and others targeting them.

An advantage of intensive supervision probation for drug or alcohol users is that there is greater opportunity to make use of treatment programs and job placement services than there would be if offenders were incarcerated.

Intensive probation supervision programs can also be a beneficial alternative to incarceration in that they allow DWI offenders greater access to treatment programs than they would have if incarcerated. Strict enforcement of the rules and punishment for lack of compliance with them are essential to the effectiveness of these programs.

Research shows that the recidivism rate among offenders assigned to intensive probation supervision programs is only about one-quarter to one half of that among offenders who do not participate in such a program (Jones et al. 1997).

Jones, R.K., Lacey, J.H., Berning, A. and Fell, J.C. (1997). An assessment of alternative sanctions for DWI offenders. In: C.Mercier-Guyon (ed), *Alcohol, Drugs and Traffic Safety – T-97, Vol. 1*: pp. 63-72. Annecy, France: CERMT.

In this study, two alternatives to incarceration as punishment for DWI were evaluated using quasi-experimental designs. Recidivism rates for repeat DWI offenders receiving intensive supervision probation with treatment or in-home confinement with electronic monitoring were compared with offenders receiving the traditional jail sanction in Milwaukee, Wisconsin and Los Angeles County, California respectively. After adjusting for other factors associated with recidivism, it was found that those offenders receiving the alternative sanctions experienced lower one-year recidivism rates than their comparison groups.

## **Alcohol Ignition Interlock**

One of the most promising strategies to prevent a subsequent occurrence of DWI behaviour among convicted offenders is the alcohol ignition interlock. This technological device actually prevents the offender from driving after drinking. The device is essentially a small breath-testing unit installed under the dash of the vehicle and linked to the vehicle's ignition system. In order to start the vehicle, the driver must provide a breath sample that registers a BAC below a pre-set value (e.g., .02%). BACs in excess of the threshold value cause the ignition to lock.

Interlocks are not intended to replace existing sanctions but, rather, to provide an additional option for preventing repeat offences. Following a period of license suspension, an ignition interlock allows a convicted DWI offender the opportunity to re-enter the driving population legally, while at the same time offering some assurance of public safety because they can drive only when sober. In this way, the installation of an alcohol ignition interlock can be viewed as part of the transition between full licence suspension and a return to full driving privileges.

Interlocks are most frequently used on vehicles belonging to repeat offenders but could also be required for first-time offenders who had high BACs. The costs of installation, maintenance and operation are borne by the offender.

Interlocks are not intended as a form of treatment for alcohol abuse. They can, however, be viewed as an adjunct to treatment, providing a constant reminder of the problems associated with alcohol abuse, a reinforcer for not drinking, and a fail-safe mechanism to prevent tragedy in the event of a relapse.

Decades of work with these devices has improved their reliability and made them very difficult to defeat. Research has shown they are effective in preventing driving after drinking, even among repeat DWI offenders. Evaluation studies show that there is a 28% to 65% lower conviction rate among DWI offenders who had an interlock installed (Morse and Elliott 1990; Beck et al. 1997; Beirness et al. 1997).

However, the beneficial effects of interlocks appear to dissipate once the device is removed (Jones 1993; Popkin et al. 1993; Tippetts and Voas 1997). One approach designed to facilitate the long-term success of ignition interlock programs is to incorporate case managers/counsellors into existing interlock programs (Marques et al. 1997). The case manager encourages clients to use appropriate health and social services and, in so doing, helps the offender

develop a plan to prevent a return to drinking and driving. Such an approach is currently being evaluated in Alberta (Beirness et al. 1997).

Beck, K.H., Rauch, W.J., and Baker, E.A., (1997). The effects of alcohol ignition interlock license restrictions on multiple alcohol offenders: A randomized trial in Maryland. In: C.Mercier-Guyon (ed), *Alcohol, Drugs and Traffic Safety - T'97*, Vol. 1: pp. 177-183. Annecy, France: CERMT.

An investigation of the effects of an alcohol ignition interlock program was performed in Maryland. More than 1,380 multiple alcohol offenders whose driver's license was either suspended or revoked for multiple alcohol offenses and who were eligible for license reinstatement after undergoing a variety of treatment programs were randomly assigned to participate in the usual post licensure treatment program (control group) or to an experimental ignition interlock program. Participants in the interlock program were given an alcohol restriction on their driver's licenses indicating they could only drive a vehicle equipped with an ignition interlock. If they owned a car, they were required to have the device installed within 45 days for a period of one year, or if they did not own one they had to sign a waiver that they would not drive a car unless it was so equipped. The alcohol-related traffic arrest rate of these two groups was compared for one year following program assignment. The alcohol traffic violation arrest rate was significantly lower for participants in the interlock program compared to participants in the control program.

Beirness, D.J., Marques, P.M., Voas, R.B., and Tippetts, S. (1997). Evaluation of the Alberta ignition interlock program: Preliminary results. In: C.Mercier-Guyon (ed), *Alcohol, Drugs and Traffic Safety - T'97*, Vol. 1: pp. 193-199. Annecy, France: CERMT.

In 1989, the province of Alberta became the first province in Canada to introduce an alcohol ignition interlock program for persons convicted of a DWI offence. A preliminary evaluation of the success of the interlock program examined the driving records of 1,007 DWI offenders who had an interlock installed prior to December 1993 and compared them with a group of DWI from the same time period who did not have an interlock installed. During the three-year follow-up period, the DWI recidivism rate was significantly lower among those who had an interlock installed than among those who did not. Survival analysis also revealed significantly higher probability of no subsequent DWI arrests among interlock program participants than among those who did not have an interlock installed.

Jones, B. (1993). The effectiveness of Oregon's ignition interlock program. In: H.-D. Utzelmann, G. Berghaus, and G. Kroj (eds.), *Alcohol, Drugs and Traffic Safety - T92*, Band 3: 1460-5. Cologne, Germany: Verlag TUV Rheinland.

Oregon's ignition interlock program was established in 1988, in 11 of 36 counties. The program requires that the suspended DWI offenders use an

ignition interlock device (IID) in order to obtain a hardship license or an early reinstatement. In general results indicated that offenders in the pilot region had lower arrest rates than offenders who postponed reinstatement until the IID requirement expired. The reduction in the rearrest rate for participating offenders is more moderate. Furthermore, evidence suggested that the beneficial effect of the IID disappears as soon as the device is removed.

Marques, P.R., Voas, R.B., Beirness, D.J., Taylor, E.P., and Cossins, D.E. (1997). Alberta interlock program: Services intervention update. In: C.Mercier-Guyon (ed), *Alcohol, Drugs and Traffic Safety – T-97*, Vol. 1: pp. 201-206. Annecy, France: CERMT.

A key aspect of the research intervention in the Alberta Ignition Interlock program, underway since 1995, has been evaluation of a human services intervention directed toward reducing recidivism post-interlock, when a DUI driver is fully relicensed. The period of interlock-monitored driving requires visits to the interlock services center every 30 to 60 days. During those visits to the Calgary service center interlock study participants undergo interviews with project personnel who are trained in problem-resolution, services-referrals, and in understanding the interlock's data recorder which logs procedural violations, time and BAC at each startup. These are reviewed to probe drink-driving patterns and other drink-related issues in Calgary. At the Edmonton service center there is no comparable human-services component. Both sites are given the same pre-post questionnaires (especially drinking and transport). Long-term recidivism data are not yet available, but preliminary results from AUDIT surveys by site show evidence of behavior change only in the intervention site from the start to the end of the interlock period.

Morse, B.J., and Elliott, D.S. (1990). *Hamilton County Drinking and Driving Study: 30 Month Report*. Boulder, CO: University of Colorado Institute of Behavioral Science.

This report presented information on the effectiveness of ignition interlock devices in reducing recidivism among convicted DUI offenders in Hamilton County, Ohio. Short-term survival rates for DUI indicated that interlock devices installed in the vehicles of DUI offenders significantly reduced the likelihood of a repeated DUI arrest as compared to license suspension. The DUI rearrest rate for persons with license suspension was approximately three times as great as that of persons with interlock installation across the entire 30 month risk period.

Popkin, C.L., Stewart, J.R., Beckmeyer, J. and Martell, C. (1993). An evaluation of the effectiveness of interlock systems in preventing DWI recidivism among second-time DWI offenders. In: H.-D. Utzelmann, G. Berghaus, and G. Kroj (eds.), *Alcohol, Drugs and Traffic Safety - T92*, Band 3: 1466-70. Cologne, Germany: Verlag TUV Rheinland.

In North Carolina, all drivers convicted of second-time DWI receive a four-year hard license suspension. At the end of the second year, they may apply for an administrative hearing, at which time a conditional license may be granted. In January 1990, the North Carolina DMV permitted some drivers who had their license revoked for second-time DWI offenses to participate in an interlock program. A quasi-experimental design was used to examine the recidivism rates of second-time DWI convictees who were divided into four groups: Non-applier, Denied License, Interlock Group and Conditional License group. The survival of each of these groups of drivers was followed during the four-year period of suspension and for the period of time after which they gained full licensure (and had the interlock removed). Results suggested that interlock programs may control a driver's behaviour while under the program but may not serve to change drinking driving behaviour overtime.

Tippetts, A.S., and Voas, R.B. (1997). The effectiveness of the West Virginia interlock program on second drug-driving offenders. In: C.Mercier-Guyon (ed), *Alcohol, Drugs and Traffic Safety – T-97*, Vol. 1: pp. 185-192. Annecy, France: CERMT.

This study examined the effectiveness of the West Virginia interlock program on second DUI offenders. In the program, a 5-year suspension for second offenders can be reduced to about two years after nine months of hard suspension and 12 months on the interlock. The findings indicated that while the interlock was in place, the second DUI offenders in the interlock program had substantially lower recidivism rates than comparable offenders.

## Administrative Vehicle Impoundment

Although license suspension, both court-imposed and administrative, is effective, many offenders still drive while under suspension. Although it is generally accepted that many who do this actually drive less often or at least more cautiously to avoid detection, there is still a need to address this relatively widespread disregard for the law. Perhaps of greater concern, it is very likely that the hard core will continue to drink if they drive while under suspension, creating a threat to safety.

To help remedy the general disregard for license suspension shown by many drivers, and to address the danger posed by the hard core, a new system has been introduced that empowers police to seize and impound the vehicle driven by someone with a suspended license. In some jurisdictions – e.g., Prince Edward Island -- the vehicle impoundment is applied to those driving under suspension for DWI and having a BAC over .08.

In such programs, the vehicle is seized and stored in a compound for a specified period – e.g., 30 days for the first offence and 60 days for subsequent occurrences. The owner of the vehicle is liable for all charges related to the towing, care, and storage of the vehicle, plus an administrative fee. If the driver of the vehicle is not the registered owner, the owner can apply to have the vehicle released prior to the expiration of the period of impoundment, provided they pay all costs and had no knowledge of the driver not having a valid license.

Administrative vehicle impoundment is a potentially powerful means of preventing repeat instances of impaired driving among DWI offenders. Although several jurisdictions operate such programs, few studies have been conducted to determine the extent to which these programs result in a reduced incidence of DWI or driving while under suspension. However, preliminary findings from a major evaluation of the administrative vehicle impoundment program in Manitoba shows that this program has a substantial impact on recidivism for DWI and driving while suspended as well as alcohol-involved driver fatalities (Beirness et al. 1997).

Beirness, D.J., Simpson, H.M., Mayhew, D.R., and Jonah, B. (1997). The impact of administrative licence suspension and vehicle impoundment for DWI in Manitoba. In: C.Mercier-Guyon (ed), *Alcohol, Drugs and Traffic Safety – T'97*: Vol. 2: pp. 919-925. Annecy, France: CERMT.

Administrative licence suspension (ALS) has become a remarkably popular DWI countermeasure. In the U.S., 40 jurisdictions are currently using ALS.

In 1989, Manitoba became the first province in Canada to introduce ALS as a means to reduce impaired driving. At the same time, vehicle seizure and impoundment (VSI) was implemented to reduce driving while suspended, particularly among DWI offenders, by removing the means for them to commit the offence. Under the ALS program, drivers who either fail or refuse to provide a breath test are issued a 90-day licence suspension which takes effect seven days hence. Under VSI, the vehicle being driven by any person found driving while under suspension is immediately seized and impounded for a period of 30 days. An examination of DWI reoffence rates among offenders charged before and after the introduction of ALS revealed a significantly higher survival probability among DWI offenders subjected to ALS (0.87) compared to those charged with a DWI offence prior to ALS (0.74). In addition, following the introduction of ALS, the elapsed time between the date a DWI offender was charged and the date of conviction in court decreased by almost 50%. Vehicle impoundment was also found to have a significant impact on persons charged with driving while suspended (DWS). DWS offenders subjected to vehicle impoundment were found to have a significantly higher survival probability (0.73) than DWS offenders charged prior to the introduction of VSI (0.54).

## SUPPLEMENTAL READING

### THE HARD CORE DRINKING DRIVER

Holubowycz, O.T., Kloeden, C.N. and McLean, A.J. (1994). Age, sex, and blood alcohol concentration of killed and injured drivers, riders, and passengers. *Accident Analysis and Prevention* 26 (4): 483-492.

Ross, H.L. (1992). *Confronting Drunk Driving: Social Policy for Saving Lives*. New Haven, CT: Yale University Press.

STAYSAFE. (1992). STAYSAFE 19. *Alcohol and Other Drugs on New South Wales Roads*. I. The Problem and Countermeasures. New South Wales: Parliament of New South Wales Joint Standing Committee on Road Safety.

Sweedler, B.M. (ed.) (1995). Strategies for dealing with the persistent drinking driver. *Transportation Research Circular No. 437*. Washington, D.C.: Transportation Research Board.

Wilson, R.J. (1993). Drinking and driving: In search of solutions to an international problem. *Alcohol Health & Research World* 17 (3): 212-220.

### A TIERED-BAC SYSTEM

American Bar Association. (1987). Drunk driving laws and enforcement: An assessment of effectiveness. *Alcohol, Drugs and Driving* 3 (2): 9-30.

Peck, R.C. (1987). *An Evaluation of the California Drunk Driving Countermeasure System -- An Overview of Study Findings and Policy Implications*. Sacramento, California: California Department of Motor Vehicles, Research and Development Section.

Peck, R.C., Wilson, R.J. and Sutton, L. (1995). Drivers license strategies for controlling the persistent DUI offender. In: *Transportation Research Circular No. 437, Strategies for Dealing with the Persistent Drinking Driver*. Washington D.C.: Transportation Research Board.

Voas, R.B. (1995). Can administrative programs control the persistent drinking driver? In: *Strategies for Dealing with the Persistent Drinking Driver*. Transportation Research Circular 437, pp. 52-6. Washington, DC.: Transportation Research Board.

### IDENTIFYING AND ASSESSING THE HARD CORE

Beirness, D.J., Simpson, H.M., and Mayhew, D.R. (1992). *Diagnostic Assessment of Problem Drivers. 1. Review of Factors Associated with Risky and Problem Driving*. TP-11549. Ottawa, Ontario: Transport Canada.

Jeune, R., Huebert, K., Slavik, W., Brown, C. and Wah, B. (1988). *IMPACT: Program Development Studies*. Edmonton, Alberta: Alberta Alcohol and Drug Abuse Commission.

Mayhew, D.R., Beirness, D.J., Simpson, H.M., and Lambie, R.W. (1992). *Diagnostic Assessment of Problem Drivers: State of Assessment and Treatment Techniques*. Toronto, Ontario: Road User Safety Office, Ministry of Transportation.

Parsons, M., Wnek, I., and Huebert, K.M. (1993). *A Unique Intervention Program for Repeat Impaired Driving Offenders*. Edmonton, Alberta: Alberta Alcohol and Drug Abuse Commission.

Popkin, C.L., Kannenberg, C.H., Lacey, J.H., and Waller, P.F. (1988). *Assessment of Classification Instruments to Detect Alcohol Abuse*. DOT HS 807 475. Washington, DC.: U.S. Department of Transportation, National Highway Traffic Safety Administration.

Timken, D.S., Packard, M.A., Wells-Parker, E., and Bogue, B. (1995). Rehabilitation of the persistent drinking/drugging driver. In: *Strategies for Dealing with the Persistent Drinking Driver*, Transportation Research Circular, Number 437: 63-67. Washington D.C.: Transportation Research Board.

### TREATING AND REHABILITATING THE HARD CORE

Ambtman, R. (1990). *Impaired Drivers' Program. Evaluation Report*. Winnipeg, Manitoba: Alcoholism Foundation of Manitoba, The Awareness and Information Directorate.

Donovan, D.M., Salzberg, P.M., Chaney, E.F., Queisser, H.R. and Marlatt, G.A. (1990). Prevention skills for alcohol-involved drivers. *Alcohol, Drugs and Driving* 6 (3-4): 169-188.

Finney, J.W. and Monahan, S.C. (1996). The cost-effectiveness of treatment for alcoholism: A second approximation. *Journal of Studies on Alcohol* 57(3): 229-243.

- Foon, A.E. (1988). The effectiveness of drinking-driving treatment programs: A critical review. *The International Journal of the Addictions* 23 (2): 151-74.
- Mann, R.E., Leigh, G., Vingilis, E.R., and DeGenova, K. (1983). A critical review on the effectiveness of drinking-driving rehabilitation programmes. *Accident Analysis and Prevention* 15 (6): 441-461.
- Mann, R.E., Vingilis, E.R. and Stewart, K. (1988). Programs to change individual behavior: Education and rehabilitation in the prevention of drinking and driving. In: M.D. Laurence, J.R. Snortum and F.E. Zimring (eds.), *Social Control of the Drinking Driver*: 248-69. Chicago, IL.: The University of Chicago Press.
- Nickel, W.R. (1990). Programs for the rehabilitation and treatment of drinking-driving multiple offenders in the Federal Republic of Germany. In: R.J. Wilson and R.E. Mann (eds.), *Drinking and Driving, Advances in Research and Prevention*: 250-66. New York, NY.: The Guilford Press.
- Voas, R.B. and Tippetts, A.S. (1990). Evaluation of treatment and monitoring programs for drunken drivers. *Journal of Traffic Medicine* 18: 15-26.

#### ADMINISTRATIVE LICENSE SUSPENSION

- Beirness, D.J., Simpson, H.M., Mayhew, D.R., and Jonah, B. (1997). The impact of administrative license suspension and vehicle impoundment for DWI in Manitoba. In: C. Mercier-Guyon (ed), *Alcohol Drugs and Traffic Safety – T'97*: Vol. 2: pp. 919-925. Annecy, France: CERMT.
- Blomberg, R.D., Preusser, D.F. and Ulmer, R.G. (1987). *Deterrent Effects of Mandatory License Suspension for DWI Conviction*. DOT HS 807 138. Final Report. Washington, D.C.: U.S. Department of Transportation, National Highway Traffic Safety Administration.
- McKnight, A.J., and Voas, R.B. (1991). The effect of license suspension upon DWI recidivism. *Alcohol, Drugs and Driving* 7 (1): 43-54.
- Sadler, D.D., and Perrine, M.W. (1984). The long-term traffic safety impact of a pilot alcohol abuse treatment as an alternative to license suspensions. *Volume 2: An Evaluation of the California Drunk Driving Countermeasure System*. Sacramento, California: Department of Motor Vehicles.
- Simpson, H.M. (1990). Licence suspension/revocation programs: Restricting driving privileges for drunk drivers. In: *Effective Strategies To Combat Drinking and Driving*. Edmonton, Alberta: Alberta Solicitor General.

### INCARCERATION

Falkowski, C.L. (1984). *The Impact of Two-Day Jail Sentences for Drunk Drivers in Hennepin County, Minnesota*. DOT HS 806 839. Final Report. Washington, DC.: National Highway Traffic Safety Administration.

Friedman, J., Harrington, C., and Higgins, D. (1995). *Reconvicted Drinking Driver Study*. AL 90-004. Albany, NY.: New York State Governor's Traffic Safety Committee.

Grube, J.W., and Kearney, K.A. (1983). A 'mandatory' jail sentence for drinking and driving. *Evaluation Review* 7 (2): 235-245.

Martin, S.E., Annan, S., and Forst, B. (1993). The special deterrent effects of a jail sanction on first-time drunk drivers: A quasi-experimental study. *Accident Analysis and Prevention* 25 (5): 561-568.

Nichols, J.L. and Ross, H.L. (1990). The effectiveness of legal sanctions in dealing with drinking drivers. *Alcohol, Drugs and Driving* 6 (2): 33-60.

Simon, S.M. (1992). Incapacitation alternatives for repeat DWI offenders. *Alcohol, Drugs and Driving* 8 (1): 51-60.

### ELECTRONICALLY MONITORED HOME CONFINEMENT

Jones, R.K., Lacey, J.H., Berning, A. and Fell, J.C. (1996). Alternative sanctions for repeat DWI offenders. In: *40th Annual Proceedings of the Association for the Advancement of Automotive Medicine*, pp. 307-315. Des Plaines, IL: AAAM.

Morris, N., and Tonry, M. (1990). *Between Prison and Probation: Intermediate Punishments in a Rational Sentencing System*. New York, NY.: Oxford University Press.

Renzema, M. (1992). Home confinement programs: Development, implementation, and impact. In: J. Petersilia, A.J. Lurigio and J.M. Byrne (Eds.), *Smart Sentencing. The Emergence of Intermediate Sanctions*. (pp. 41-53). Newbury Park, CA: Sage.

Schmidt, A.K. (1989). Electronic monitoring of offenders increases. *NIJ Reports* January/February 212: 2-5. Washington, DC.: U.S. Department of Justice.

### INTENSIVE SUPERVISION PROBATION

- Lurigio, A.J. and Petersilia, J. (1992). The emergence of intensive probation supervision programs in the United States. In: J. Petersilia, A. J. Lurigio and J.M. Byrne (Eds.), *Smart Sentencing. The Emergence of Intermediate Sanctions*. (pp. 3-17). Newbury Park, CA: Sage.
- Jones, R.K., Lacey, J.H., Berning, A. and Fell, J.C. (1996). Alternative sanctions for repeat DWI offenders. In: *40th Annual Proceedings of the Association for the Advancement of Automotive Medicine*, pp. 307-315. Des Plaines, IL: AAAM.
- Voas, R.B. and Tippetts, A.S. (1990). Evaluation of treatment and monitoring programs for drunken drivers. *Journal of Traffic Medicine* 18: 15-26.

### ALCOHOL IGNITION INTERLOCK

- Beirness, D.J. (1996). Alcohol Ignition Interlocks: A link between punishing and helping systems. Paper presented at the *Transportation Research Board Human Factors Workshop on New Strategies for Dealing with the Persistent Drinking Driver*. Washington, D.C.: January, 1996.
- EMT Group. (1990). Evaluation of the California interlock pilot program for DWI offenders. Sacramento, CA.
- Marques, P.R. and Voas, R.V. (1995). Case-managed alcohol ignition interlock programs. A bridge between the criminal and health systems. *Journal of Traffic Medicine* 23: 77-86.
- National Highway Traffic Safety Administration. (1992). Model specifications for breath alcohol ignition interlock devices (BAIIDs). *Federal Register* 57: 11772-11787.
- National Highway Traffic Safety Administration. (1993). New developments in breath alcohol ignition interlock devices. *Traffic Tech* 37. Washington, DC.: National Highway Traffic Safety Administration.

### ADMINISTRATIVE VEHICLE IMPOUNDMENT

- Voas, R.B. (1992). *Assessment of Impoundment and Forfeiture Laws for Drivers Convicted of DWI. Phase I. Report: Review of State Laws and Their Application*. DOT HS 807 870. Washington, D.C.: National Highway Traffic Safety Administration.

Voas, R.B., Tippetts, A.S., and Taylor, E. (1996). The effect of vehicle impoundment and immobilization on driving offences of suspended and repeat DWI drivers. Presented at *40th Annual Proceedings of the Association for the Advancement of Automotive Medicine*, October 7-9, 1996, Vancouver, British Columbia.