EFFECTIVE TOOLS OF THE IMPAIRED DRIVING SYSTEM

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The Sober Smart Driving education program is produced by the **Traffic Injury Research Foundation** with funding from **Beer Canada**. It shares knowledge and science to answer common questions about alcohol, its effects on driving skills, and impaired driving.

Administrative penalties

All Canadian jurisdictions utilize administrative procedures. An impaired driving arrest can result in two kinds of licensing actions. The first is an administrative licence suspension or revocation that is applied upon arrest regardless of conviction. The second form is an administrative post-conviction action ordered by the licensing agency. Hence, a single impaired driving arrest can result in both a suspension or revocation action and a mandatory post-conviction suspension. Post-conviction suspensions involving suspension or revocation run concurrently (at the same time) with Criminal Code driving prohibitions (typically one year) applied by the court.

The most common form of suspension involves the police issuing a 90-day suspension to drivers who fail or refuse to provide a breath test (Beirness and Singhal 2007). License suspension is applied at the time of the offence and most often takes effect within 30 days. Studies have found that license revocation is much more efficient than the usual judicial process and that it has “both general and specific deterrent impacts” (Beirness and Singhal 1997, 921; Mann et al. 2000, 1141; Fell and Scherer 2017).

Unfortunately, research shows that between 25-75% of drivers who have their licence suspended, revoked, or are otherwise unlicensed continue to drive (Nichols and Ross 1990; Griffin and DeLaZerda 2000; Marsh 2017; Crozier and Garrett 2019). This makes the inclusion of other sanctions, such as alcohol interlocks, a necessary component of any licence suspension or revocation for at-risk offenders.

Mandatory alcohol testing (MAT)

Over the last four decades if a police officer in Canada had a reasonable suspicion that a driver had consumed alcohol, they could require the driver to conduct a breath test. In December 2018 Changes to the Criminal Code eliminated the requirement of reasonable suspicion as the basis for requiring an alcohol breath test. These changes give police authority to demand a breath test from any driver, even in the absence of suspicion or cause. MAS increases the perceived and actual probability of drinking drivers being apprehended, both of which are key factors in general deterrence.

Several studies have shown a positive impact of MAS in countries around the world (Homel 1990; Wells et al. 1997; Barnett and Read 2005; Terrell et al. 2008; O'Donnell et al. 2020)). Much evidence comes from Australia, where MAS has been in place since the 1980s. Australian research reports annual reductions in serious crashes by 25% (Henstridge, Homel, and Mackay 1997). In Finland, there MAS was introduced in 1977, the number of alcohol-impaired drivers on the road, determined by roadside surveys, decreased by 58% (Dunbar, Penttila, and Pikkarainen 1987). Research from Ireland indicated a 19% reduction in overall traffic fatalities within the first year following the implementation of MAS (Road Safety Authority 2007).

Conversely, random breath testing (RBT) refers to the random testing of a driver's breath at the roadside for alcohol; the police do not need grounds to believe the driver has been drinking or reasonable suspicion to demand the breath test. This is comparable to the process used at RIDE programs or sobriety checkpoints, but the main difference is that all drivers passing through the checkpoint are stopped and asked to provide a breath sample.

RBT is widely acknowledged to be one of the most cost-effective means of deterring impaired driving. A 2004 World Health Organization study reported that each dollar spent on RBT results in a cost savings of US $19 (Peden 2004). The primary objective of RBT is to create a general deterrent effect among the public to prevent as many drivers as possible from driving impaired (Watson and Freeman 2007). Deterrence is created because the presence of high levels of enforcement combined with media coverage/publicity of these efforts counters drinking drivers' beliefs that they can avoid attracting attention as they can be pulled over and required to submit to a breath test regardless of their behaviour (Ross 1992). Therefore, the perceived probability of getting caught is increased.

Transdermal alcohol monitoring devices

Continuous alcohol monitoring devices (CAM) are designed to monitor the drinking behaviour of offenders. This technology, primarily used in the U.S., tests vaporous sweat (perspiration) excreted through the skin for the presence of alcohol using an electrochemical sensor (typically in the form of a tamper-resistant bracelet). The primary benefits of this technology include the continuous monitoring of offenders 24 hours a day as well as an independent assessment of compliance with court orders to abstain from alcohol use. When properly implemented, this technology can enhance the supervision of offenders with alcohol issues and improve the efficiency of monitoring.

CAM is a flexible technology that permits probation officers or treatment officials to either increase or reduce the level of monitoring and/or restrictions based on offender compliance. Transdermal alcohol testing bracelets also permit probation officers to balance supervision, community integration, and rehabilitation, which allow offenders to maintain employment and supportive relationships (Robertson et al. 2006).

Transdermal alcohol monitoring devices are widely used in the United States. The Secure Continuous Remote Alcohol Monitor (SCRAM®) is the most established transdermal device available on the market. Since 2003, over 40 American states have implemented SCRAM and to date, more than 100,000 offenders have been monitored using this device (Alcohol Monitoring Systems (AMS) 2010). Transdermal devices test every 30 minutes for alcohol exiting the skin and reports are sent periodically via a modem.

Reporting frequency may depend on the jurisdiction or release previsions of the offender (i.e., hourly, daily, weekly). Positive results are reported after a drinking event has ended, meaning the reading has returned to zero.

As one example of this technology, SCRAM is a non-invasive continuous alcohol monitoring tool that monitors and measures alcohol consumption 24/7 for an extended period, from any location. The bracelet transmits daily test information to a modem installed in the offender's residence or work using a radio frequency signal. This information is encrypted and transferred via a telephone line to the manufacturer, where the data is then interpreted and analyzed to determine if alcohol has been consumed.

If the bracelet detects alcohol, an alert is sent to the participant's court supervisor, probation agency, or treatment provider. The device is a tamper and water-resistant bracelet, containing an electrochemical sensor that is attached to the offender using a double strap (Robertson et al. 2006). It also includes an infra-red component and temperature measure to detect if the participant tries to place an object between their skin and the device or remove the device. SCRAM offers a low cost per test; it does not require labor after installation or appointments to administer tests, and it is physically non-invasive and minimally disruptive to the offender's daily activities (Robertson et al. 2006).

To date, SCRAM has been used to supervise a variety of offenders including impaired driving and domestic violence offenders, offenders actively tested for drugs, and underage drinking offenders. SCRAM has been applied at several points in the justice system including pre-trial, probation supervision, specialty courts, treatment, and re-entry/parole.

Many peer-reviewed studies concentrating on the reliability and validity of the science underpinning this technology have clearly established that ingested alcohol can be validly measured in perspiration through the process of transdermal alcohol testing (Robertson et al. 2006; Leffingwell et al. 2013; Simons et al. 2015; Barnett et al. 2014; Luczak et al. 2018). Through empirical analysis, it has been confirmed that:

- Transdermal alcohol testing is a valid method to determine whether an individual has consumed alcohol and is designed to be used as a screening device to determine alcohol use and level of consumption (i.e., small, moderate, or large amount).
- Transdermal alcohol readings are correlated to BAC and BrAC. However, simultaneous breath or blood and transdermal alcohol readings should not be expected to produce similar results due the delay between the consumption and absorption of alcohol and the excretion of alcohol after it has been metabolized.
- While the attainable accuracy may only be an approximation of BAC due to subject-specific factors that influence ethanol gas concentration at the skin surface, the transdermal concept is valid (NHTSA 2007).

Of interest, there have also been a number of evaluation studies examining the SCRAM device in particular. Research conducted by the University of Colorado Health Science Center, the Michigan Department of Corrections, and the Alaska Justice Statistical Analysis Center, conclude that the SCRAM device is a valid and reliable way of testing for alcohol consumption and is a "fast-acting deterrent" (Bock, 2003; McKelvie 2005; Chen and Sloan 2014;).

In 2007, NHTSA published a report on the evaluation of the validity pertaining to transdermal monitoring devices. In evaluation of circumvention protection, the SCRAM™ system performed well. The communication protocols built into SCRAM™ that combine daily automated upload of data and the issuance of daily alerts to a program monitor could likely prevent most offenders from beating the system (Marques and McKnight 2007). It was concluded that this approach was a wise choice from a public safety standpoint.

A separate study conducted by the National Center for State Courts revealed findings consistent with the substance abuse treatment literature. It reported that wearing the device for at least 90 days appeared to reduce the probability of recidivism compared to wearing the device for a shorter period of time (Flango and Cheesman 2009).

The literature concerning the effectiveness of and the recidivism rates associated with CAM is promising but limited to date because it is a relatively new technology. While preliminary findings from initial evaluation studies are promising, more research involving large scale surveys and studies are needed to strengthen these findings.

Vehicle impoundment

Vehicle impoundment consists of securing the vehicle of persons convicted of certain offences such as driving while impaired or driving with a suspended licence. Impoundment sanctions can vary, however, most jurisdictions in North America classify impoundment as the action of seizing a driver's vehicle typically as a sanction for a given offence (e.g., impaired driving). Hundreds of dollars in fines can be accrued based on the class of offender and the length of time that the vehicle is impounded.

Canadian vehicle impoundment programs differ slightly among provinces. In Ontario, a car can be immediately impounded for a minimum of 45 days if a driver is caught driving when their licence is suspended for a Criminal Code conviction (Ministry of Transportation of Ontario (MTO) 2020). In Saskatchewan, a vehicle will be impounded for 30 days if it is the driver's first conviction; a second occurrence within a 2-year period from the first offence can result in vehicle impoundment for a minimum of 60 days (Saskatchewan Government Insurance (SGI) 2020). The same conditions have been applied in British Columbia and Newfoundland and Labrador. In each of the provinces, offenders must pay all fines and fees related to towing, impoundment, and release of their vehicle.

In the United States, the length of the impoundment period is generally 90 days for a second offence and 180 days for a third offence. For a fourth or subsequent offence, the vehicle is subject to forfeiture (NHTSA 2008). The Federal transportation bill TEA-21 mandates that state impaired driving laws for second and subsequent convictions require that all vehicles of repeat offenders be impounded or immobilized for some length of time during the licence suspension period (NHTSA 2008).

Vehicle seizure and impoundment have been effective in reducing impaired driving offences by separating offenders from their vehicles. A study conducted in Ohio found that vehicle impoundment decreased recidivism by large percentages, during and after the impoundment period (Voas et al. 1997). Among repeat offenders with one prior impaired driving conviction, the reduction in impaired driving offences was 80% during the impoundment period and 56% after the impoundment period. In California, repeat offenders whose vehicles were impounded had 34% fewer convictions for driving while suspended or unlicensed, 22% fewer traffic convictions, and 38% fewer crashes (DeYoung 1998). An Australian study reported the effectiveness of vehicle impoundment where among high-range offenders, re-offence rates for those who had their vehicle impounded were statistically significantly lower for all licence periods compared with offenders who did not have their vehicle impounded (Watson et al. 2020)

Research demonstrates that vehicle impoundment has consistently been effective in reducing impaired driving offences among convicted drivers (NHTSA 2005; Canadian Centre on Substance Use and Addiction 20

Supervision & Treatment

Meaningful and appropriate supervision is needed to ensure offenders do not slip through the cracks.

Once impaired drivers have been convicted, it is important to have proper monitoring mechanisms in place that provide adequate levels of supervision according to the risk posed by the offender. A lack of follow-up to ensure penalties are served and conditions are followed (e.g., to ensure that offenders do not drive once their driver's licence has been suspended or revoked) is essential to reduce impaired driving. Money invested in enforcement, prosecution, conviction, and sanctioning by the justice system is wasted if offenders are not supervised and are able to evade sanctions designed to protect the public and change behaviour. It has also been well established that repeat offenders in particular are familiar with loopholes in the system and know how to exploit them to avoid completing the penalties that were imposed.

For example, offenders may not comply with licence restrictions, treatment requirements, or participate in alcohol interlock programs as required due to gaps in information-sharing and a lack of coordination. Improved supervision and good communication among all involved stakeholders (e.g., probation, the courts, law enforcement, treatment and licensing agencies) is necessary to streamline the process of monitoring impaired driving offenders. DWI courts are a good example of how practitioners from each area of the system can come together and work collaboratively in supervising offenders and holding them accountable. These principles are applicable to traditional courts as well.

Assessment and treatment are efficient tools for offenders with alcohol issues.

Assessment: An assessment is a process used to "confirm the presence and severity of alcohol dependency issues and identify the appropriate level of care needed to address them" (SAMHSA, 2005). Through the use of assessment, offenders who are most likely to benefit from, and/or need, treatment can be identified and targeted. Given the limited resources that are available and the costs associated with treatment, offenders who do not need or will not benefit from treatment can be screened out. Through the use of these tools, practitioners can determine which offenders may need increased supervision as well as those who are more likely to recidivate. Identification and referral of these higher-risk offenders in a timely fashion will maximize their potential for behaviour change.

Treatment: Once offenders are identified as presenting a high risk for re-offence, referrals can be made for appropriate treatment interventions. Detoxification is the first step towards overcoming physical and psychological dependence on alcohol. After detoxification, other levels and intensity of care (determined through ongoing assessments) can be assigned. Many interventions have proven to be successful in treating DWI offenders including:

- motivational interviewing;
- cognitive behavioural therapy;
- screening and assessments; and,
- pharmacological interventions (drug therapy).

Treatment can be delivered on an inpatient or outpatient basis (Williams et al., 1996). Those offenders who have severe dependency issues are more likely to be referred to inpatient programs either in hospitals or in non-hospital residential care. The majority of offenders however, are likely to benefit from outpatient services. These services can be intensive and rigidly structured for those who require it (9-20 hours per week which can include evenings or weekends) or on a less rigid basis (a couple of hours per week) for those who do not have the same level of need. While inpatient treatment can be expensive due to the costs associated with 24-hour care and accommodations, outpatient services are a more affordable and easily accessible option.

Motivational interviewing: This one-on-one patient-centred, non-confrontational counselling session is brief, and may be used in at least three different stages of an offender's processing. First, if an offender screens positively for alcohol use problems, a health care professional can share the screening results and their significance with the offender in a short, 10-15-minute interview. These are patient-centred and encourage the offender to create a plan of action which ranges from reducing their drinking to seeking substance abuse treatment (NHTSA 2015). Second, as illustrated earlier, offenders who have been assessed as being unready for receiving treatment may also be engaged in motivational interviewing, where the focus is on facilitating an offender's readiness for self-change or motivation to treatment (Marques and Voas 2005). The idea is to encourage through engagement the offender into accepting their problem(s), understanding the benefits of being treated for the problem, and then accessing the necessary services that are designed to help them overcome the problem. The premise of this technique is for professional staff to build a rapport with the offenders and empower them to change on their own (Taxman et al. 2004). Third, motivational interviewing is also useful throughout the supervision process for providing critical feedback to reinforce progress by helping offenders learn to "analyze" their own attitudes and behaviour and determine how they can advance their behavioural change (Taxman et al. 2004). Such aftercare programs may involve weekly counselor-led sessions, offered at treatment sites (Harrison and Asche 2001).

Cognitive Behavioural Therapy (CBT): CBT encompasses a wide range of cost-effective psychotherapeutic approaches that deal with cognitions and beliefs as a means to reducing problematic behaviours (Beck 1993). Some of the better-known approaches include cognitive therapy, rational emotive behaviour therapy, reality therapy and multimodal therapy. All have in common the objective of identifying thoughts, assumptions, beliefs and behaviours that are related to negative emotions and underlying dysfunctional problems (e.g., drinking problems) and replacing these with more realistic and functional ones. It has been used successfully in the treatment of many disorders and behavioural problems, including substance abuse disorder. CBT approaches are used with individual patients or with groups. Some of these approaches rely on more traditional client-therapist interactions; others rely on computer-based software.

Screening and assessments: Screening is normally a precursor to assessment and treatment. It is a process designed to identify who can be excluded from a more detailed examination for the presence of substance abuse issues, and who needs to be included for further examination or assessment. It is usually based on the results of specific testing instruments given to offenders to establish whether they have alcohol dependency issues that require some form of intervention. Screening is not designed to explain the nature and/or severity of alcohol use problems, but rather to 'raise suspicion' and determine whether or not further assessment is warranted (Connors and Volk 2003). The screening process may be considered a form of treatment of brief intervention since it can have therapeutic benefits (Wilk et al. 1997; Wells-Parker and Williams 2002).

Pharmacological interventions: It is generally agreed that greater use of pharmacological interventions could enhance treatment progress since it stabilizes the patient and creates a facilitating environment. According to National Institute on Drug Abuse's (NIDA) Principles of Drug Abuse Treatment for Criminal Justice Populations, "medications are an important part of treatment for many drug abuse offenders" (NIDA 2014). Indeed it has been argued that there is a need for greater receptiveness of the fact that medications may be an integral part of treatment (Robertson 2007), and despite immense progress in pharmacotherapy research, medications that have been approved to treat alcohol dependence are still underutilized (Arias et al. 2008). Programs and services that include a medicinal component may be referred to as pharmacotherapy, medication, drug therapy, etc. Three oral medications (naltrexone, acamprosate, and disulfiram) and one injectable medication (extended-release injectable naltrexone known as vivitrol) are currently approved for treating alcohol dependence (NIAAA 2005). They have been shown to help patients reduce drinking, avoid relapse to heavy drinking, achieve and maintain abstinence, or gain a combination of these effects (NIAAA 2005).

In addition, recovery management studies reveal that timely stage-appropriate interventions based on client characteristics (identified during assessments) can lead to improved outcomes and will not over penalize low-risk offenders (Andrews & Bonta, 2010). Of some interest, the neuroscience of addiction reveals cognitive impairment (i.e., the ability to inhibit behaviour, plan ahead, anticipate consequences) impedes high-risk offenders' ability to abstain without intervention, supervision, and treatment. Therefore, assessments that consider cognitive impairments are also important.

More awareness is also needed among decision-makers and judges in particular, about the long-term and cost-saving benefits of assessments. The importance of assessment prior to sentencing should be emphasized as this can provide the judge with an indication of the most appropriate conditions/ sanctions to impose.

Intensive interventions for high-risk offenders can harm low-risk offenders.

An offender's risk level can be defined as their probability of reoffending. Impaired driving offenders should be provided with supervision and treatment levels that are commensurate with identified risk levels; high-risk offenders should receive more intensive supervision and/or treatment as needed.

Intense interventions are more effective when delivered to higher-risk offenders. Research has found that these initiatives can actually increase the failure rates among low-risk offenders (Lowenkamp & Latessa, 2004; Andrews & Bonta, 2010). The placement of low-risk offenders in intensive interventions or programs exposes them to high-risk offenders who can be a potentially negative influence and manipulative.

Low-risk offenders are classified as being fairly pro-social (i.e., they tend to comply with social norms). Hence, when they are placed in restrictive, intensive, and highly structured programs they may begin to adopt more anti-social characteristics as they attempt to adapt to their environment and peers. This can result in interventions having the opposite effect of what was desired, i.e., increasing recidivism as opposed to reducing it.

For this reason, it is important to identify low-risk offenders (based on assessments) and exclude them from intensive interventions that are better suited for high-risk offenders.

Positive reinforcement of good behaviour is beneficial.

When dealing with offenders, it is important to not only hold them accountable for non-compliance but to also respond to, and reinforce, compliant or desired behaviour. Research suggests this can be effective. The danger in focusing solely on punishment is that after time, sanctions tend to pile up. The more punitive controls placed upon an offender, the greater the likelihood that they will violate those conditions and be returned to the criminal justice system.

When too many sanctions and conditions are placed upon offenders they may feel as though they are being set up for failure. Instead of successfully completing their probation and/or programming they will continually incur violations and be recycled through the system for non-compliance (Lucken, 1997; Casey, 2019). This can become frustrating for practitioners and offenders alike and is likely to result in offenders dropping out of programs before completing them.

Accordingly, interventions should balance punitive and rehabilitative approaches, as appropriate, to create accountability as well as recognition of progress, along with strategies that ensure public safety. Positive reinforcement can be as simple as giving verbal praise; or it could be a reduction in the level of supervision or relaxing of some conditions (Casey, 2019). It has been suggested that four positive reinforcements should be applied for every negative reinforcement action in order to achieve optimal behaviour change (Crime and Justice Institute, 2004). By recognizing progress achieved by offenders, they may be motivated to continue demonstrating compliance and not feel as though they are facing impossibly high or insurmountable expectations.

What does the Sober Smart Driving Education Program (SSD) contain?

The Sober Smart Driving Education Program contains facts to help Canadians learn about the risks associated with drinking and driving and encourages everyone to speak up and talk about why they choose not to drink and drive.

Key topics discussed on this site include:

- Drinking and its effects on driving
- Magnitude & characteristics of drinking & driving
- Basics of the impaired driving system
- Impaired driver programs & penalties
- Myths & misconceptions about drinking and driving

Each of these topics contains a series of fact sheets structured in a question and answer format which are available for free download and sharing (with attribution). These resources are designed to support the education and prevention efforts of communities, schools, health and road safety professionals and advocacy organizations.

To view more fact sheets, or to get more information about alcohol, its effects on driving skills, and impaired driving, visit **SoberSmartDriving.tirf.ca**.

Traffic Injury Research Foundation

The mission of the Traffic Injury Research Foundation (TIRF) is to reduce traffic-related deaths and injuries. TIRF is a national, independent, charitable road safety research institute. Since its inception in 1964, TIRF has become internationally recognized for its accomplishments in a wide range of subject areas related to identifying the causes of road crashes and developing programs and policies to address them effectively.

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