



**ALCOHOL INTERLOCKS:**  
**OPPORTUNITIES TO IMPROVE TRAFFIC MANAGEMENT**  
PROCEEDINGS OF THE 13<sup>TH</sup>  
INTERNATIONAL ALCOHOL INTERLOCK SYMPOSIUM



The knowledge source for safe driving

# The Traffic Injury Research Foundation

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

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OPPORTUNITIES TO IMPROVE TRAFFIC MANAGEMENT**

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ALCOHOL INTERLOCK SYMPOSIUM

Robyn D. Robertson / Ward Vanlaar  
*Traffic Injury Research Foundation*

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It was certainly a pleasure to partner with TraFi to deliver the 13th Annual International Alcohol Interlock Symposium. Marita and her colleagues at TraFi were instrumental in helping us to create a very high quality and interesting scientific agenda that spanned the breadth of relevant issues in the field. Their hands on approach to work with us to identify speakers and organize the many logistical details associated with their participation ensured that the event was manageable and seamless. Moreover, their guidance in selecting a most suitable venue enabled us to comfortably accommodate the more than 130 attendees, representing 21 countries from around the world who attended this event.

This Symposium would not have been possible without support from Mr. Pasi Kempainen, President, TISPOL and Chief Superintendent with the National Traffic Police, Mr. Mikko Paatero, National Police Commissioner, and Hanna Piipponen, National Police Board. Their participation ensured that conference attendees were able to better understand the importance of engaging police agencies in the development of interlock programs in all jurisdictions.

The ongoing support of this international symposia series that has been provided by manufacturers during the past 13 years has substantially contributed to the development of new knowledge, to advances in technology and program development, and the diverse partnerships which have enabled us to achieve considerable progress to strengthen interlock delivery and reduce impaired driving.

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**Alcohol Countermeasure Systems, Corp**



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Their ongoing commitment to this international symposia series encourages the pursuit of innovative ideas, the sharing of perspectives and the development of collaborative partnerships among governments, practitioners, researchers, policymakers, and industry that is needed to advance the field.

TIRF also acknowledges the contribution of the many speakers, moderators, discussion group leaders, and note takers who facilitated dialogue, captured discussion, and stimulated the sharing of important information needed to support the delivery of alcohol interlocks in a range of settings. Finally, TIRF extends its appreciation to all of the participants who attended this annual event to share their experiences, opinions, insights, and expertise to help guide the development and implementation of alcohol interlock programs across jurisdictions and around the world.

The content of this report is based on the summary of discussion and perspectives at the Symposium and does not necessarily reflect the views of individual presenters, participants, or sponsors.

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# INTRODUCTION AND GOALS

This report contains the proceedings of the 13th Annual Alcohol Interlock Symposium, hosted by the Traffic Injury Research Foundation (TIRF), an independent, charitable road safety research institute based in Ottawa Canada, in partnership with the Finnish Transport Safety Agency (Trafi).

More than 130 participants representing 21 countries participated in this event. Countries in attendance included:

- > Australia (Victoria, New South Wales, Western Australia, Australian Capital Territory), New Zealand
- > Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Liechtenstein, Luxembourg, Norway, Poland, Sweden, The Netherlands, United Kingdom
- > Canada (ON), United States (CO, HI, MD, MN, OH, OK, TX, VA)
- > Japan, Russia
- > South Africa

The theme of the event was “Alcohol Interlocks as a Traffic Management Tool”, in order to acknowledge the contribution of both commercial and offender interlock programs. Given the European focus of the Symposium, this theme poignantly emphasized the fact that interlocks are versatile and not limited to usage with offenders. Devices can effectively be used in a pro-active approach to manage traffic safety among company fleets, taxis, school buses and government-owned vehicles as was evident from presentations at the Symposium. This approach is essentially different from the approach of offender programs in that the goal is not necessarily to rectify a drink driving problem. Rather, the goal is to increase the quality of services by showing commitment to safety, and, as such, instilling confidence among, and showing leadership toward customers, clients and the public alike. Hence, a key objective of the event was to draw upon lessons learned with regard to offender-based and commercial programs, and to broaden understanding of alcohol interlocks as a flexible road safety tool in different environments.

There has been much progress in the field of alcohol interlocks since the 2011 Symposium. Some of the new developments and advances that have transpired are briefly described below.

First, several new countries, including Greece, Columbia, Brazil, Chile and Mexico, have either expressed interest in the use of interlocks to better improve traffic safety and/or have already begun to use interlocks.

There has been considerable growth in the number of alcohol interlocks installed in European countries in commercial markets. In addition, we are also seeing more European countries also becoming involved the

development of offender-based programs. Efforts to strengthen technology have also continued with the CENELEC committee issuing for comment new draft test methods and performance standards for offender programs as well as for devices for general preventative use.

The European Transport Safety Council has shown tremendous leadership, and delivered a number of seminars in jurisdictions across the EU to emphasize the importance of interlocks as an important road safety tool. Seminars have been held in several countries including Belgium, Finland, Ireland, Switzerland and the Czech Republic. The goal of these seminars has been to strengthen awareness of alcohol interlocks and encourage international cooperation in the field.

Also of note, a new European Forum on Interlocks has been established to bring together program administrators from a number of countries to discuss common issues and promote leadership on this issue. In addition, several countries have made significant progress to strengthen their programs include the Netherlands, Norway and Sweden. The growing interest in interlocks is perhaps best evidenced by the number of European jurisdictions that have implemented both commercial and offender-based applications, including Finland, France, the Netherlands, Norway and Sweden. A particularly noteworthy event is that, for the first time, the Norwegian Parliament hosted an international alcohol interlock seminar that included both leading international experts as well as representatives of important government and non-government organizations in Norway. The outcomes of this event were of interest to many stakeholders around the world.

Alcohol interlocks also continued to be a focus of research in Europe. From Germany, new research on the cost-benefits of interlocks from an offender perspective has been published, and a long-term experimental study that has been proposed is described in these proceedings. Similarly in Finland, new research has been published on the adoption of alcohol interlocks and its effects in professional transport. A second study has investigated the effects of alcohol interlocks on drink driving offenders.

Looking Westward, in Canada, there was continued growth in the use of interlocks, most notably in British Columbia and Alberta with the inclusion of first offenders in these programs. Nova Scotia is continuing its outcome evaluation of its unique interlock program, in which treatment is a major component, and the results of this evaluation are expected in 2014. Also, in Canada, follow up research has been completed to increase knowledge about the performance of offenders while on the interlock device in relation to a variety of program features. This work was funded by Lifesafers in partnership with the Canadian Institutes for Health Research and published in late 2013.

In the United States the number of installed interlocks grew approximately 14% between June 2011 and June 2012, increasing from 243,000 up to almost 279,000. It was also anticipated that this rate of growth would continue with the passage of MAP 21 – the new Federal Transportation Bill which removed all restrictions on interlocks as a sanction for convicted drunk drivers and offers grants to states that pass and enforce all-offender interlock laws. This incentive-based approach is sure to have very positive effects.

Another important development related to a new set of technical devices standards were published by the National Highway Traffic Safety Administration (or NHTSA) in May 2013 and are available on their website.

Of importance, in the US program administrators formed a national association, with funding from NHTSA and an overview of its activities is included in these proceedings. A published case study of interlock programs in several jurisdictions was also released. Funding was also provided by NHTSA to update TIRF's Alcohol Interlock Curriculum for Practitioners, and expand it to include four new modules including one on certification, calibration and testing, one on jurisdictional reciprocity, and one on program evaluation.

Regrettably, in North American markets, there is yet to be interest in the development of alcohol interlock programs for commercial drivers; despite all of the success and growth that Europe has demonstrated with these types of programs. Perhaps focusing a spotlight on some the diverse commercial applications that have been established, and their respective outcomes, can help stimulate increased interest in these programs among North American jurisdictions.

Looking South, in Australia a National Policy Group was formed to encourage greater consistency in programs across Australia. Installations have grown with an estimated 10,000 interlocks installed as a result of some 11,000 drink drive convictions each year.

A number of important issues, that posed considerable challenges on other continents, such as jurisdictional reciprocity and offender monitoring, are starting to be addressed in some part of the world. Their efforts can provide a source of inspiration as to what can be achieved with collaboration and cooperation. As part of these proceedings, representatives of Australia shared the knowledge they have gained. Of particular interest, in Victoria, new community corrections orders legislation has been implemented. It required the use of alcohol interlocks for a larger group of offenders that included those convicted of domestic violence and other non-driving related offences. This legislation was unique and expected to dramatically increase the number of interlock installations in this state. The Australian Capital Territory has also developed a new interlock program, as has Tasmania, and neighbouring New Zealand.

Moving east, in Japan a major bus company started to install alcohol interlocks as an advanced safety device. There was also growing interest in Russia about the diverse ways in which alcohol interlocks can improve traffic safety.

At the same time, although there has been much progress that has been achieved as evidenced by the sheer number of jurisdictions using interlocks, the number of applications that have been developed as well as the overall number of interlocks installed, it is equally important not to be complacent. There are still hurdles to overcome that require sustained efforts. Such is the case in Belgium, France, and Western Australia where legislative frameworks have been developed, but implementation has been slow to follow. In addition, despite considerable interest in Spain and Ireland, there has been limited political support. The reality is that the importance of strong political leadership and adherence to research findings cannot be underscored enough, and are much needed to encourage action. The outcomes of this symposia series

have been important in this regard. Not only do these events spotlight progress, but also the priority issues that require attention and new research that is essential to inform our efforts.

Issues that need to be addressed include ways to further encourage the implementation of optimal program features, effective strategies to monitor offenders, efficient ways to incorporate treatment efforts and integrate other proven interventions into the delivery of interlock programs, and to ensure that interlocks are affordable for drivers and offenders of varying socio-economic status.

In sum, these proceedings contain a snapshot of the interlock field, the areas where significant progress has been achieved, and opportunities to make further gains in the future.



Robyn Robertson, MCA  
Program Chair  
President and CEO  
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## A EUROPEAN PERSPECTIVE ON DRINKING AND DRIVING

(Based on presentations by Ms. Marit Ruuda, European Commission, Mr. Pasi Kemppainen, President, TISPOL, Ilyas Daoud, European Transport Safety Council, Desiree Schaap, Dutch Ministry of Transport, Peter Silverans, Belgian Road Safety Institute, Hans Krogh Harestad, Ministry of Justice and Public Security, Ingar Werkström, Swedish Transport Agency)

Within Europe, road safety is a recognized problem that warrants attention and concern. As such, the European Commission (EC) supports and promotes a comprehensive approach to road safety initiatives, and targeting different facets of the road crash problem. This is achieved using road safety campaigns, encouraging more effective laws, and applying enforcement strategies. It also supports a range of countermeasures and programs to manage these drivers.

Across the European Union (EU), there is growing interest in and attention to the increasing mobility of drivers, such that, within any country there is a larger proportion of foreign drivers of both passenger and transport vehicles. This emerging problem warrants concern in light of the fact that road safety laws vary considerably across EU countries. This is due to strong beliefs that such decisions are the purview of individual jurisdictions. With regard to drink driving laws, this has resulted in varying illegal blood alcohol concentration (BAC) limits for all drivers, as well as differences in relation to both commercial drivers and young drivers. This has made it challenging for law enforcement to identify problem drivers from other jurisdictions, or to determine what types of restrictions may be associated with their driving privileges. This issue requires further study<sup>1</sup> and coordinated efforts to address it.

**EU alcohol-crash problem.** Between 2001 and 2011 there has been an average 45% reduction in road deaths in the Europe and as of 2011, leading countries including the United Kingdom, Sweden, Norway, The Netherlands and Denmark averaged 30-40 road deaths per million inhabitants, with no countries having more than 110 deaths per million inhabitants (ETSC 6th Road Safety PIN Report, 2012).

With regard to drink driving, of the 31,000 deaths in road collisions in the EU in 2010, Members States attributed 11% of deaths to drink driving. It is further estimated that up to 2% of kilometres driven in the EU are driven with an illegal blood alcohol concentration (BAC). However, according to the European Commission (EC), it is estimated that 25% of all road deaths across the EU are alcohol-related. The ETSC<sup>2</sup> reports that an estimated 7500 road deaths would have been prevented in 2010 if all drivers had obeyed drink driving laws.

<sup>1</sup> New study from EU commission – 2013 import assessment – find this study

<sup>2</sup> ETSC is comprised of 45 organizations from across Europe that promote an evidence-based approach to road safety policy across the European Union (EU). The organization consists of more than 200 experts that contribute to reviews, policy positions, newsletters, lectures, press releases and annual reports. Their work is funded by the European Commission, member organizations, member states and corporate sponsors.

It is important to underscore that country comparisons of drink driving statistics are rather challenging in the EU context due to the substantial differences in data collection across countries. For example, each Member State has its own way of attributing a road death to drink driving. Hence, in 2010, seven countries attributed fewer than 6% to drink driving deaths while five countries attributed more than 30% of road deaths to this behaviour. However, insight can be gained by examining how the numbers of deaths attributed to drink driving have changed in recent years.

In this regard, one indicator of progress that is tracked by ETSC is based on the difference between the average annual percentage reduction in deaths attributed to drink driving and the corresponding percentage reduction in other deaths. Using this measure, between 2001 and 2010 there was an average reduction of 1.4% for 23 countries in relation to all road deaths, however for drinking and driving there was a 7.6% for 21 countries, meaning progress is being achieved.

**EU enforcement efforts.** Law enforcement agencies across Europe have a broad mandate that contains a range of priorities that often compete for attention. Police agencies are tasked with responding to all criminality on the roads, and not just to traffic offences. These issues include illegal immigration, human trafficking, terrorism, drug trafficking, transportation of stolen goods, movement of illegal waste, smuggling, money laundering, stolen vehicles, cargo thefts and other criminal activity in parking areas. Of note, there is also strong evidence that individuals engaged in traditional criminal activities are also involved in fatal and injury crashes on the road.

Many countries are also focusing their attention on three main traffic priorities with regard to enforcement efforts: speeding, non-use of seatbelts and drinking and driving. However, there are also other emerging road safety issues that are garnering more attention from an enforcement perspective including drugged drivers, distracted drivers and elderly drivers.

In recognition of the magnitude of the road crash problem, and the costs associated with it, among law enforcement agencies across the EU there is also growing interest in focusing attention on road safety issues and underscoring the importance of traffic enforcement. In this regard, the organization of a Working Group dedicated to road safety is desired. Perhaps one of the most significant barriers that police agencies currently face is the fact that licensing sanctions or restrictions do not follow drivers across borders, making the enforcement of road laws an unprecedented challenge. This is a growing concern in light of the increasing mobile population across countries.

Today, the leading road safety enforcement organization in Europe that is tackling road safety generally, and drink driving in particular, is The European Traffic Police Network or TISPOL<sup>3</sup>.

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<sup>3</sup> The European Traffic Police Network (TISPOL) is a road safety law enforcement initiative that coordinates activities across jurisdictional borders. It was founded in 2000 and includes 29 member states (EU 27+Norway and Switzerland). Its activities are co-financed by EU projects (e.g., LIFE-SAVER and Road Policing Activities). TISPOL has also produced a variety of policy papers focused on road safety issues. These papers and more information is available from [www.tispol.org](http://www.tispol.org)

This organization undertakes three main activities:

- > identification of good practices that are disseminated through seminars, conferences, training, manuals, databases and website;
- > the coordination of European-wide enforcement operations targeting speed, drinking and drugged driving, seatbelts, trucks and buses; and,
- > the identification of new emerging issues.

TISPOL also undertakes lobbying at the European Union and it works with a broad range of partners including other European road traffic enforcement bodies (ECR), automotive and transport industries, and other bodies such as the ETSC. It is also a strong believer in intelligence-led policing in which data are used to inform the deployment of resources.

Each year, TISPOL undertakes several Pan European enforcement operations. Two of these are focused on alcohol and drug-impaired driving (June and December) and each of these operations lasts approximately one week. In 2011, there were more than two million tests of drivers for impairing substances. Of these, 31, 293 tested positive for alcohol and 2,999 tested positive for drugs. Hence it is agreed that the presence of alcohol interlocks in all vehicles could serve to substantially reduce the drink driving problem. In addition, the development of new technologies is also increasingly adopted to support police enforcement efforts. In the past five or six years drug screening has been introduced in several countries in Europe. Similarly, some evidential roadside testing devices are also being employed in some jurisdictions.

However, across EU countries, enforcement efforts in relation to drink driving are inconsistent. For example, the number of roadside tests for alcohol per 1,000 population varies from more than 400 in Finland, to less than 100 in many countries, with some reporting to have as few as 14 checks per 1,000 population. Generally speaking, those countries that conduct more roadside tests report much lower percentages of drivers testing positive for alcohol as compared to those that conduct fewer tests.

Public awareness of drink driving laws also varies considerably. For example, a 'EU Barometer' report from October 2009 revealed that, on average only 27% of respondents were aware of the illegal BAC limit in their country, 36% gave a wrong answer, and 37% did not know the answer.

According to the EU Barometer on Road Safety, based upon a public opinion poll conducted by ETSC, 94% of respondents consider driving under the influence of alcohol to be a major road safety problem. Across countries between 52% and 82% of respondents agreed that governments should do more to address the drink driving problem. In response, there is a growing trend among EU countries towards lowering existing BAC limits to be in line with EU recommendations on maximum BAC legal limit. Some 18 EU countries apply lower BACs for novice drivers (0.0 – 0.2) and 18 EU countries apply lower BACs for professional drivers (0.0 to 0.2 BAC).

**EU alcohol interlock programs.** The emergence of alcohol interlock programs has been different from the establishment of these programs in North America. EU jurisdictions generally take one of

two approaches, with a growing number of jurisdictions pursuing both. The first type of program is rehabilitative in nature and focuses on high-risk and recidivist drink drivers and/or drivers that are alcohol-addicted. The second type of program is based upon a quality assurance philosophy as it relates to commercial transport vehicles such as school buses, emergency or government vehicles, heavy vehicles or public transportation such as taxis and buses.

Briefly summarized, a number of countries have adopted both approaches targeting drink drivers and transport vehicles of varying kinds, including Sweden, Finland, and France. In the United Kingdom (UK), a Road Safety Bill introduced a pilot rehabilitation programme for drink driving offenders, and a coach company fitted interlocks to its entire fleet (approximately 500 vehicles) in February 2010. Other countries, such as The Netherlands, Norway, Denmark and Belgium target drink drivers only, and pilot projects are underway (e.g., Austria and Slovenia) or are under consideration (e.g., Germany).

**Implementation challenges in EU alcohol interlock programs.** Despite the sometimes substantial variations across European countries regarding how alcohol interlock programs are developed and implemented, these jurisdictions share some common barriers to implementation. These are briefly described below.

- > **Withdrawal of the licence.** Perhaps one of the most pronounced barriers to implementing alcohol interlock programs for drink driving offenders is the EU Driving Licence Directive which notes that driver licences are not to be either issued or renewed for drivers who are dependent on alcohol or are unable to refrain from drinking and driving. Those jurisdictions (e.g., Norway, Finland and Sweden) that have implemented interlock programs for high-BAC or recidivist drink drivers who may often suffer from alcohol dependence or abuse are challenged to comply with this directive.
- > **Program administration.** In EU jurisdictions, multiple agencies are frequently involved in the administration and delivery of alcohol interlock programs. For example, while driver licencing authorities have responsibility for issuing driver licences, conversely the national police agency may be responsible for the withdrawal of these licences. Similarly, courts, probation or treatment agencies may be involved in working directly with those offenders enrolled in the program, and medical authorities or doctors administer clinical tests and exams to determine fitness to drive. Still other agencies may be tasked with the type approval of devices, the oversight of vendors, or the management of interlock data. Ultimately, the coordination, communication and sharing of information and data across these different entities is paramount to the success of the program. However, in many jurisdictions, although progress is being made, more concerted efforts are needed to strengthen agency relationships and partnerships and to establish better communication protocols to facilitate this needed exchange.
- > **Ensuring support from criminal justice practitioners to utilize the interlock sanction.** Some jurisdictions also experience reluctance on the part of frontline practitioners (e.g., judges, prosecutors, probation officers, medical practitioners) to play a leadership role in

ensuring that alcohol interlocks are more regularly applied to offenders. Concerns exist relating to cost, workload and low levels of knowledge.

- > **Voluntary programs have low participation rates.** Many jurisdictions report that low levels of program participation are a concern. This is often due to the fact that driving bans are limited (e.g., six months) which conflicts with rehabilitation programmes that usually last one year or longer. In reality, a majority of offenders fail to voluntarily enrol in alcohol interlock programs, and, for this reason, more jurisdictions are interested in exploring mandatory programs. However, there are often political and administrative issues that must be addressed before this can occur.
- > **Raising awareness about the program among practitioners and the public generally.** Despite educational and promotional efforts on the part of governments that have implemented alcohol interlock programs, overall understanding of these programs and knowledge of these devices is low, not only among frontline practitioners who are implicated in the delivery of devices, but also among the general public.
- > **Ensuring the correct type of device is installed for each class of drivers.** For those jurisdictions that deliver alcohol interlocks in both offender and commercial vehicle programs, there is some concern about whether the correct type of device is being installed in each type of vehicle.

**Looking forward in the EU.** One of the main barriers to the growth of alcohol interlock programs for offenders in the EU stems from the EU Driving Licence Directive which notes that driver licences are not to be either issued or renewed for drivers who are dependent on alcohol or are unable to refrain from drinking and driving. The enforcement of interlock restrictions for drivers is further hampered by variations in country codes that denote the interlock restriction. Currently codes vary across countries and those used to date include 103, 105, 107, 111, 112, and 113. Efforts are needed to establish an EU code for alcohol interlocks that could be adopted by all EU countries to clearly identify an alcohol interlock restriction that would be recognizable to police officers regardless of country. This would require an amendment to the 3rd Driving Licence Directive. One recommendation is that the letters AIP (for Alcohol Interlock Program) precede the country code (e.g., AIP 111, AIP 103, AIP 107). A committee, or the European Forum on Interlocks should consider further study this initiative and propose recommendations that countries could adopt to increase licencing uniformity.

To further promote positive changes to address the drink driving problem, the ETSC has put forth several recommendations that they encourage EU Member States to adopt. These include:

- > Create a Directive establishing a zero tolerance approach to drink driving for commercial and novice drivers.
- > Encourage Member States to prepare national enforcement plans that include drink driving targets.
- > Work towards standardized definitions of drink-driving and alcohol-related collisions.

- > Introduce uniform standards for alcohol interlocks in the EU and help all Member States to introduce them.
- > Introduce alcohol interlocks for repeat offenders and professional drivers and, in due course, introduce a non-intrusive alcohol detection technology in all vehicles.

Other recommendations include, adopting a zero tolerance for drink driving, setting minimum targets for alcohol checks of the driving population (e.g., one in five drivers should be checked each year), introducing systematic breath-testing to all driver stops and road collisions, introducing rehabilitation programmes and higher penalties to address recidivism, organizing nationwide drink driving campaigns, and incorporating alcohol interlocks in rehabilitation efforts.



## A FINNISH PERSPECTIVE ON DRINKING AND DRIVING

(Based on presentations by Kalle Parkkari, Finnish Motor Insurers' Centre (VALT), Mr. Mikko Paatero, National Police Commissioner, Marita Löytty, Finnish Transport Safety Agency (Trafi), Hanna Piipponen, National Police Board, Katja Levola, Centre for Economic Development, Transport, and the Environment, Anne Vehmas (Ramboll Finland Oy))

**Finland's alcohol-crash problem.** The drink driving road crash problem in Finland is a source of concern for governments, the insurance industry and criminal justice practitioners. It is recognized that drink drivers themselves represent a substantial portion of road deaths, however, while smaller in proportion, other passengers and other road users are included in these fatalities. While there has been progress in reducing these deaths since 2007, drink driving deaths still account for one-quarter of all road deaths. As such, continued efforts to address this problem are needed.

Greater understanding of the road crash problem in Finland has been made possible through the efforts of the Finnish Motor Insurers' Centre. Its goals are to prevent crashes, reduce serious consequences, and develop safety recommendations. The investigation teams undertake in-depth investigations of road crashes that involve the analysis of vehicle data, road infrastructure data, previous offences, interviews and medical information. Analyses focus on the identification of risk factors and preventative opportunities. As a consequence, the database maintained by the Centre is rich source of information that is used to inform decisions by insurers.

According to the Centre, while slightly more than half of drink drivers are found to have no prior drink driving offences in the past five years, the balance of more than 40% of offenders have one or more priors and they are frequently detected at high-BACs. Often these drivers are young and middle-aged.

Crashes involving these drivers also often reveal that speeding and non-use of seatbelts are common factors. In fact, approximately half of drink drivers were speeding more than 30 km per hour at the time of their crash. The vast majority of these crashes also involve passenger vehicles. Approximately one-third of drink driving crashes occur on main roads, whereas more than 40% occur on regional or connecting roads, posing a challenge to the delivery of law enforcement efforts. With regard to the licence status of drink drivers, data show that 18% of them had their driving licence revoked and 7 % had never held a driving licence. In addition, 7% of drink drivers drove a stolen vehicle whereas 15% of them had borrowed the vehicle with permission.

**Finland's enforcement efforts.** The enforcement of road safety laws in Finland is delivered by approximately 7,500 officers who police some five million citizens. Despite these numbers, the enforcement

of drink driving laws is intensive. In fact, data show that there are 429 breath tests per 1,000 drivers in Finland each year, and Finnish drivers are more likely to be stopped for a breath test than anywhere else in the EU. Not surprisingly, less than 1% of those tested for alcohol are above the illegal limit of .05. This has created a strong deterrent effect and, as a consequence, the rate of drink driving is declining slowly. Currently only 1 in 800 is an impaired driver.

Police agencies are supportive of the new alcohol interlock law ignition interlock and believe that this legislative change can greatly affect behaviour. In Finland, 10,000 driving trips were prevented by alcohol interlocks as drivers testing positive for alcohol over the preset limit were prevented from starting their vehicle. As such, there is agreement that alcohol interlocks should be a standard and affordable feature in all new vehicles.

**Finland's alcohol interlock program.** The Finnish government undertook an alcohol interlock trial in July 2005, and subsequently implemented a national program in July 2008. The program provided that drivers, after a drink driving offence, may choose to obtain interlock-restricted driving rights in lieu of a driving ban. The device is considered a treatment tool to measure driving habits. After an interlock period (that may range from one to three years), the device may be removed from the vehicle and the driver licence reinstated. In addition, drivers also have the option to keep the device installed in the vehicle. In these instances, voluntary use settings are applied.

While there has been growth in Finland's program, participation is still low. To illustrate, there are approximately 50 new interlock installations each month compared to about 20 000 drink drivers (including recidivists) arrested by the police each year. As a consequence, a national working group proposed in 2012 that, while current practices regarding interlock installation have been proven to work relatively well, efforts are needed to improve the system and increase the use of devices as an alternative to imposing a driving ban. As such, two proposals were put forward. First, it was proposed that the minimum duration of driving bans imposed for drink driving offences be extended to better underscore their reprehensible nature and the danger they pose. Second, it was proposed that the status of a controlled right to drive as an alternative to a driving ban be reinforced such that courts would be able to impose a controlled right to drive if the requirements for its imposition are met and if the drink-driving offender in question gave his/her consent.

Some of the limitations associated with Finland's offender program are due to the fact that, although there are consequences associated with missed retests, driving a non-equipped vehicle, and removing or breaking the device, there are no sanctions for failed tests. In addition, police and health practitioners lack the resources to review the interlock data that is captured. Finally, during the three-year trial, drivers were not able to install the device prior to the court conviction for drink driving. This has since changed and installations prior to convictions are now possible.

Based upon experiences to date, Finland conducted a series of evaluations of the interlock program. The first part of the study involved a survey of the opinions and experiences of all the drivers in the programme

since July 2008. The response rate to the survey was nearly 50% (704 responded). The second part of the study examined serious traffic offenders (especially DWI) before, during and after interlock usage based upon driver records. Additional components of the study included an analysis of the interlock data with a focus on failed tests as well as interviews with representatives of the relevant authorities involved in the program.

At the time of this Symposium, preliminary\* results were available:

- > 42% of respondents reported drinking less, and 29% of respondents reported that they do not drink before driving. An additional 18% of respondents indicated that they do not drink anymore.
- > While half (50%) of the drivers reported that they would have the interlock device removed from their vehicle at the of the interlock period, approximately one-third (31%) reported that they would voluntarily keep the device installed.
- > More than half (63%) of respondents agreed that alcohol interlocks were very necessary for all drink driving offenders; an additional 25% reported that interlocks were quite necessary.

\* The final report has since been published in English and is available here: [http://www.trafi.fi/palvelut/julkaisut/2013\\_julkaisut/effectiveness\\_and\\_impact\\_of\\_alcohol\\_interlock-controlled\\_driving\\_rights](http://www.trafi.fi/palvelut/julkaisut/2013_julkaisut/effectiveness_and_impact_of_alcohol_interlock-controlled_driving_rights)

The Ministry of Social Affairs and Health has also enacted requirements with regard to health and driving. It notes that the minimum health requirements for driving are not fulfilled if drivers are deemed a substance abuser because not only does this substantially weaken their ability to drive, but their continuous abuse of alcohol or other impairing substances poses a risk to other road users. Yet it is further noted that doctors may consider this health requirement for driving to be fulfilled (in relation to alcohol), if drivers have an alcohol interlock installed.

Alcohol interlocks are also used in the transportation of several different types of school children as well as day-care transportation. As of 2012, devices were installed in more than 10,000 taxis and buses used for these purposes.

Further efforts are also underway to investigate the introduction and effects of interlock usage in publicly funded transport services, bus traffic and professional goods transport. One of these studies investigated the use of alcohol interlocks among professional drivers. An internet survey link was distributed to companies or directly to drivers in September–October 2011 with the objective of obtaining feedback from companies and professional drivers including drivers of taxis, buses, coaches and lorries (heavy trucks). A total of 246 responses were received and the average driver reported driving 75 000 km/year.

Survey results revealed the following:

- > 68% of survey respondents reported that the best thing about using an alcohol interlock was the positive image it created for the company; 46% identified the positive emphasis of the devices on traffic safety;

- > 51% of respondents reported that the worst things about using an alcohol interlock were the time and inconvenience of the device when starting the vehicle; 30% noted the awkwardness of breathing into the device in a public space; and, 27% reported the warm up time in very cold temperatures;
- > 59% completely agreed that alcohol interlocks had not hindered their driving assignments in practice;
- > 55% reported that the alcohol interlock gave them complete certainty that their BAC was not more than .02 when they were driving; and,
- > 23% reported that that the alcohol interlock use improves the company's public image a lot; 40% agreed that it slightly improves it.

Findings emerging from the study are that companies must implement an alcohol interlock policy that relates to the instruction and supervision of drivers and that specifies procedures to be followed if drivers are found to be over the present limit. In addition, device data reports must be handled pursuant to the requirements of the legislation of personal information (employee privacy). There is also support to expand the use of transport in more forms of traffic.

A new publication about the implementation and effects of alcohol interlocks in professional transportation is available in English (Trafi Publication 5/2012 <http://www.trafi.fi/publication05-2012>).



## JURISDICTIONAL RECIPROcity FOR ALCOHOL INTERLOCK PROGRAMS

(Based on presentations by Bo Lönegren, European Forum on Interlocks, Rachel Muscat, Australian Capital Territory Government, Discussion Groups)

**Reciprocity in the EU.** The presence of alcohol interlock programs in several European countries has been a positive development. However, one important unintended consequence is that there are challenges associated with identifying and managing interlock-restricted drivers when they travel abroad. These challenges stem from the fact that the types of programs vary across jurisdictions and may involve drink driving offenders, commercial drivers or both.

Moreover, in some countries, the likelihood of detection by police enforcement can vary substantially, and each country has adopted a distinct national code for these interlock-restricted drivers. Yet often police officers are often not familiar with codes for interlock restricted drivers in other countries, meaning that these drivers are unlikely to be detected. This results in these drivers being processed by police like any regular driver on the road. Similarly, for those interlock-restricted drivers that relocate to other jurisdictions, licence restrictions are easily avoided.

There are also a number of practical challenges that have been identified in managing interlock-restricted drivers across jurisdictions that arise due to differences in cultural, political structure, level of authority, the types of agencies involved and enforcement style. As a first step in addressing this issue, it is important to develop a network of representatives who have the opportunity to come together to share program information and experiences, to establish relationships and to exchange experiences and ideas. In the EU, this has been achieved through the formation of the European Forum on Interlocks. The Forum was formed in 2010 and has organized a few meetings thus far that have focused on efforts of alcohol interlock program leaders to organize and coordinate activities across jurisdictions, and to strengthen the delivery of alcohol interlock programs around the world with an emphasis on the development of best practices and consistency across programs.

**Reciprocity in Australia.** In Australia, alcohol interlocks have been proposed and well-supported since the early 1990s. National standards were developed for devices (Standards Australia 1997) and programs (Austroads 1995). The first alcohol interlock program became operational in South Australia in 2001. Since then, interlock programs for drink driving offenders have been implemented in five of the eight Australian states (Victoria, South Australia, New South Wales, Queensland and the Northern Territory). However, these programs vary across jurisdictions with Victoria and South Australia operating a mandatory re-licencing program for certain types of drink drivers, while the programs in New South Wales and the Northern Territory are mandatory. The remaining three states (Western Australia, the Australian Capital Territory, and

Tasmania) are all due to have interlock programs that are operational by 2014, making alcohol interlock programs available across the nation.

At a national level, the Australian National Road Safety Strategy underscores the importance of addressing the drink driving problem. It specifically supports the development of an integrated interlock program for recidivist drink drivers in the form of increased use of interlocks accompanied by best practice alcohol rehabilitation schemes, and the assessment of alcohol dependence problems prior to the re-issuance of driving licences.

However, although the National Road Safety Strategy was developed jointly by all Australian jurisdictions and approved by the Ministers of the Australian Transport Councils in May 2011, Australia is still in the process of working towards this integrated approach. So while in Australia, there is a clear intention of Governments to create a seamless system of interlock programs across jurisdictions, in practice this has been difficult to achieve in light of legislative differences and variation in transport information systems nationally.

More positively, one such step towards this integrated approach is the implementation of the National Alcohol Strategy's recommendation to investigate the current evidence base and public interest in measures to prevent alcohol-related injuries. This investigation includes an examination of the appropriateness of installing interlock devices on vehicles driven by a larger population of drink driving offenders.

This work has already progressed in the form of a project commissioned by Austroads, the peak road transport body in Australia and New Zealand, comprised of government representatives from each jurisdiction. The Austroads Project is investigating options to extend the coverage of alcohol interlock programs in Australia. A detailed look at this project is provided in the section on International Progress. In essence, the project is designed to produce workable options to extend the use of interlocks to corporate fleets, buses, taxis and trucks as a quality assurance measure, and perhaps in the broader driver population on a voluntary basis. This project is a demonstration of Australia's acknowledgement of the effectiveness of interlocks in changing drink driving behaviours among a wide range of drivers, and to reduce the risk of alcohol-related crashes.

**Discussion Groups.** The outcomes of the discussion groups on this topic suggest that there are varying opinions across the globe regarding the extent to which the re-location and mobility of interlocked drivers is an issue that requires attention at this time.

However, among those who do feel it is an issue worthy of attention, there are some challenges to addressing it. First, there are several countries that do not yet have an interlock program of any type, meaning that there is little recourse to manage either interlock-restricted drivers, or commercial vehicle drivers with interlocks in these jurisdictions. This is a concern because, even when drivers relocate to some jurisdictions, they may not be required to exchange their driver licence. This may enable some of them to avoid the interlock condition.

Second, among those jurisdictions with interlock programs, there are important differences in legislation, licencing and licence withdrawal practices that must be negotiated, to say nothing of the fact that the likelihood of detecting interlock-restricted drivers may be much lower in some jurisdictions than others. There are also overlapping perspectives regarding which authorities may be best-positioned to manage this issue, with leading preferences being either licencing authorities or police agencies.

Despite these challenges, discussion groups also recognized some opportunities that exist to begin to address this problem. It was recommended that coordination among licencing and program authorities should be explored. In addition, more training for police agencies regarding interlock devices, interlock restrictions, and various country codes used to identify these drivers could be beneficial. Other suggestions included efforts to harmonize country codes for interlock restrictions, or to create an EU recognized code. It was also proposed that routine checking of driver licences in the Central European licence registry could be part of the solution. Finally, it was widely recognized that solutions to this issue should also engage interlock vendors, who often are best positioned (through the delivery of services) to track offenders as they move across jurisdictions.

While it is unlikely that this issue will be quickly or easily addressed, it is important to underscore the value of dialogue and continued exchange of ideas and experiences to begin to resolve this challenge

# RAISING PUBLIC AWARENESS



(Based on presentations by Anna-Liisa Tarvainen, Central Organization for Traffic Safety (Liikenneturva), Debbie Weir, MADD United States, Andy Murie, MADD Canada)

Historically, many countries have adopted traditional approaches to public awareness campaigns that have emphasized legislative reforms, enforcement efforts and traffic safety programs. These campaigns were generally supported by a broad and united front of authorities and various communities. Messages frequently centred on the risk of getting caught, the increasing consequences associated with drink driving, and issues related to the management of the drink drivers and the personal responsibility of drivers.

**Finland.** In the 1970s in Finland, regular integrated campaigns emerged that underscored stronger laws and the reduction of the illegal BAC limit to .05 as well as the use of roadside breath testing devices. The 1980s produced campaigns that focused on negative attitudes towards drink driving and highlighted the importance of personal self-control and maintaining sobriety when driving. A new emphasis on personal responsibility was ushered in during the 1990s, that promoted strong attitudes against, and the importance of preventing drinking drivers from getting behind the wheel. It also communicated a move towards social host responsibility and promoted the use of alternative transportation options. Since 2000, campaign strategies have focused on making the right choices in relation to drinking and ensuring that drivers do not find themselves in situations where they may drive after drinking.

While considerable progress has been made in reducing drink driving, public awareness campaigns still have an important role to play in terms of continuing to focus attention on the issue, and encouraging social responsibility prevention efforts. They also continue to be instrumental in shaping social norms, public opinion and political decision-making. However, in order to continue to be effective, campaigns must reflect societal changes. In this regard, campaigns should select a target group and have a clear message. Messages must be visible and sustained in cooperation with non-government organizations (NGO's) and authorities. It is equally important that messages are delivered using diverse media including public service announcements on television and public service channels, cinemas, radio and printed materials. Each of these approaches should be tailored to different audiences.

**United States.** The campaign undertaken by Mothers Against Drunk Drivers (MADD) in the United States has produced tremendous results. To date, 17 states have implemented an all offender ignition interlock law, and California has a four-county pilot program protecting over 14 million people. In addition, there are 12 states with interlock laws targeting offenders with a BAC at .15 or above. More importantly, all 50 states now have some type of interlock law and there are an estimated 279,000 devices currently in use. This represents a substantial increase from the 101,000 devices that were installed in 2006.

At a Federal level, there has also been substantial progress on the topic of alcohol interlocks. Not only is there continued funding for at least three high visibility enforcement events each year, but also Federal transportation legislation (MAP-21) will provide over \$10 million for two years for Advanced Alcohol Detection Technology, currently known as DADSS. States are also now required to submit Highway Safety Plans subject to the approval of the Secretary of Transportation and this strategy provides greater accountability and ensures federal dollars are spent on drink driving countermeasures that work.

Based on its experiences, MADD US had identified some key elements that are connected to the success of public awareness campaigns. These initiatives must not only successfully put a human face on the horrific statistics but also be based upon grassroots activation to garner public support. More importantly, these campaigns must be developed and delivered with collaboration between governmental and private safety partners, and strongly encourage media engagement to communicate that crashes could have been prevented if interlock devices had been installed.

**Canada.** In Canada, there has been considerable progress in encouraging and expanding the use of alcohol interlock programs. However, the insurance costs for drink drivers in some jurisdictions are prohibitive and can lead to unlicensed driving in some jurisdictions. While approaches to insurance vary across Canada (e.g., public versus private), in Ontario, insurance poses a significant barrier to dealing with drink driving offenders and encouraging alcohol interlock program participation. To illustrate:

- > A young male driver aged 22 with four years of driving experience in Toronto would typically pay approximately \$3,000 with a clean driving record. However, following a drink driving conviction, this same driver can expect to pay between \$10,000 and 20,000 for insurance.
- > A male aged 45 with 29 years of driving experience would pay \$1,800 for insurance versus \$10,000-15,000 with a drink driving conviction.
- > A female aged 22 with four years of driving experience would pay \$3,000 for insurance versus \$8,000 to 17,000 with a drink driving conviction.

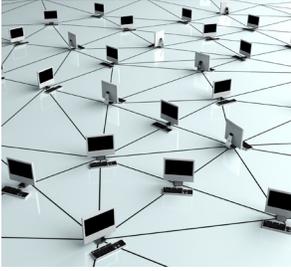
In comparison, insurance rates in other parts of Canada are much lower. For example:

- > In British Columbia there is a \$905 surcharge each year (for 3 years) for drink drivers.
- > In Saskatchewan there is a one-time \$500 surcharge.
- > In Manitoba there is a \$294 surcharge (for seven years) for a 20-year-old drink driver and a \$283 surcharge (for 11 years) for a 30-year-old.
- > In Quebec the surcharge for drink drivers can vary from \$600 to \$800 per year depending on the agency that provides insurance and licence and registration fees.

Finally, in jurisdictions with different insurance strategies (e.g., Alberta, Nova Scotia, New Brunswick) insurance costs post drink driving conviction may vary from \$5,000 to \$7,000 annually.

In order to begin to address this problem in Ontario, MADD Canada met with insurance companies and regulators to share information about alcohol interlock devices and the effectiveness of the program, as

well as the level of participation in it in Ontario. The outcomes of this meeting revealed that insurance regulators were unfamiliar with alcohol interlocks and that this issue should be further explored.



# DATA PROTECTION ISSUES AND STRATEGIES

(Based on presentations by Ramon Gouweleeuw, RDW, Olof Stenlund (Swedish Transport Agency))

The protection of confidential, personal data, and the security of the data collected by interlock devices is a concern across jurisdictions with alcohol interlock programs. In particular, governments implement protocols in order to protect data from being leaked to the public and the media, and to prevent against its unauthorized use. This is often accomplished through detailed agreements and notices with the vendors, transport and licencing authorities, and service providers. As program authorities increasingly turn their attention to this issue, valuable lessons can be learned from those jurisdictions that have made great strides in relation to this topic.

The Netherlands has one of the most progressive and rigorous approaches to data security associated with alcohol interlocks in the world. This is due to the overlapping requirements for personal information and data security in relation to these devices. One of these requirements stems from the Dutch Privacy Act which regulates access to personal information and is supervised by the government. There are also CENELEC standards which are applicable to all EU countries, and a new part of the standard for interlock devices is focused on the protection of personal information and security of data. The new draft version of the CENELEC Standard (EN 50436-6) does not tell you how to protect and secure data from interlocks, however it does provide an independent and objective manner of assessing whether the protection of data is sufficient in regard to the privacy of the participant, and strong enough for practitioners and judges when contested.

There are also protection profiles for devices. A protection profile is a certified document that describes the requirements and threats that have to be addressed to ensure the data security from devices. This profile actually involves seven different levels of security. Finally, these devices must complete a conformity of product audit. In brief, the security of the data from an interlock device means that it must be tamper-proof, that the device cannot be manipulated in the collection of data, and that the data reported are also protected against manipulation.

RDW is the national vehicle authority in the Netherlands and is responsible for monitoring the safety and environmental aspects of the vehicle fleet. Its core tasks include:

- > admitting vehicles and components (Type Approval);
- > supervising periodical technical inspections;

- > gathering, storing, updating and managing data about vehicles, their owners and, vehicle documentation, and providing information to third parties; and,
- > issuing documents related to vehicles licences and drivers licences

As such data protection and security of interlock devices falls within their purview. More specifically, their focus is on two classifications of threats: 1) those to the device and the service application; and, 2) those from the operational environment in which data are housed.

To illustrate, there are a few different types of threats that are a source of concern. These are briefly summarized below along with solutions to address them. First, there is concern in relation to interference with the sensors and the signals to the vehicle. For example, the connection to the vehicle ignition signal can be altered or replaced, or the handset can be opened to gain access to the sensor and give a false signal to the interlock. A solution to address this issue involves the use of tamper-evident seals on the handset and control unit to ensure that the signals of the vehicle and sensor are authentic, and that the interlock or the connections cannot be changed without detection.

A second type of security concern relates to preventing the generation of event records or undesirable event records. An example would involve the modification of information (events) between the handset and control unit by 'listening in'. A solution for this issue is the encryption of the records to ensure that the information of the events cannot be altered.

Finally, a third type of security concern relates to the correct transfer of event records between the device and the service application. For example, a positive BAC level that constitutes a violation is deleted from the file or a number of events are deleted or substituted. To combat this, the interlock must be able to record and encrypt events that are linked to a unique consecutive number that is encrypted within the event record. This means that persons could not create new event records from scratch or replay event records.

In Sweden, alcohol interlock vendors that are approved are responsible to ensure that all requirements are met, however there is flexibility in how vendors can achieve the requirements. Vendors are responsible for the data transmitted from the alcohol interlock and to make sure it is handled in such a way that no one other than the supplier and the Swedish Transport Agency can see the information. This is important to protect the privacy of drivers. In the event that vendors are not able to meet these requirements, their approval can or will be revoked.

In addition, vendors must have in place a quality assurance system, and a privacy notice agreement with the Transport Agency in relation to the processing of personal data in order to protect customer privacy. Vendors must also put in place privacy notice agreements with their service centers, and receive approval based upon tests of the data transmission to the Agency. Finally, vendors must have a technology agreement with the Transport Agency for the systems of data transmission

Vendors are also required to comply with specific data log formats and the handling of those logs starting from the device used by the customer, to the service center, to the interlock vendor and to the Swedish

Transport Agency. Of note, the logs are sent to the Swedish Transport Agency using Secure FTP (SFTP) in the format of XML, and the Transport Agency responds to the vendor using FTP in the format of XML. Examples of data that are included in the log are start-up and retest breath tests, missed tests, event dates and BAC results.

While the data protection and security requirements in Sweden and The Netherlands are exceptionally rigorous, these approaches illustrate the seriousness with which governments take the issue of confidentiality and data security, and the importance of considering and implementing the most appropriate protocols to protect this information.

# INTERNATIONAL PROGRESS



(Based on presentations by Ilona Buttler, Motor Transport Institute, Kathryn MacIver, Ministry of Transport, Caroline Stewin, DEKRA Automobil GmbH, Dr. Armin Kaltenecker and Mag. Birgit Oburger, Austrian Road Safety Board (KFV), Rachel Muscat, Australian Capital Territory Government)

Several countries around the world are making progress with the implementation of alcohol interlocks, whether in the form of pilots or in relation to national programs. Highlights of activities in this area are briefly summarized.

**Poland.** For more than three decades, Poland has undertaken a wide range of traditional initiatives to successfully reduce the risks caused by drink drivers. However, the decline has slowed down recently as is the case in many jurisdictions around the world. Traditional strategies to handle these road users are becoming less effective, perhaps because the nature of the problem is changing.

Of greater concern, new problems are emerging. Reports from Poland show that alcohol consumption in the general population is increasing, access to alcohol for young people is getting easier, and alcohol consumption levels are escalating among older drivers. Hence, new strategies are needed to tackle drink driving.

In Poland, there are strong efforts to promote the value of alcohol interlocks to politicians and public. Small interlock program pilots have been implemented in Warsaw and Katowice, with each locale having four buses equipped with alcohol interlocks. Poland relied upon the CENELEC standards for device selection and currently three devices are available (i.e., Smart Start device, Dräger Interlock XT, and Noidss “system ilteQ” which is the first device of Polish make).

Surveys reveal good support for the use of these devices. When respondents were asked if they would be in favour of using an alcohol interlock that prevented the car from starting if drivers exceeded the illegal alcohol limit for driving, approximately half of them strongly agreed it should be used for all drivers (46%) and for re-offenders (50.1%). Approximately one-third of them fairly agreed (31.6% for all drivers and 30% for re-offenders).

There are two important factors that are currently barriers to the widespread use of alcohol interlocks in Poland that must be addressed in order to move forward. First there is government concern about an overall economic slowdown in the near future. Second, there is no clear mechanism to implement alcohol interlocks in law and a lack of people or organizations to promote this measure in Poland.

**New Zealand.** The country of New Zealand is large and sparsely populated. The road infrastructure is poor and vehicles are inexpensive and often older, meaning that they frequently lack safety features. Of greater concern, the population has easy access to alcohol.

On response, the country has adopted a safe systems approach to road safety, and implemented a 2020 Road Safety Strategy entitled “Safer Journeys”. Within this strategy, drink driving is a priority concern. Currently the illegal limit in New Zealand is .08, random breath testing is permitted, and there is zero tolerance for young persons under age 20 to drink drive. So while some progress has been achieved in reducing drink driving, more efforts are needed.

For this reason, in September 2012, the Federal government implemented an alcohol interlock program which is administered by the NZ Transport Agency. This framework was important because courts are generally overloaded and the incarceration rate is high. Hence reliance on the Transport Agency to administer the program was deemed essential.

The program itself is court-based and targeted towards high-BAC (.16+) and recidivist drivers. Following a three-month hard suspension period, drivers must complete 12 months on the device. In order to exit the program, drivers must have no violations in the last six months, or in the last three months if an alcohol assessment is also completed.

This program was made possible due to the collaboration between the Transport Agency, and Departments of Justice, Corrections and Health. However, not all of the features that were proposed were included when the program was implemented. Features of the program that were proposed but were not accepted included a mandatory program for all offenders and no driving disqualification period. On a positive note, since the implementation of the program, there have been calls from the new Minister of Transport to take steps to further enhance the program.

**Germany.** There is ongoing concern about drink driving in Germany. Under their current licencing system, recidivist and high-BAC drink drivers lose their licence and must complete a driving ban period. Before being relicenced, they must first complete a medical-psychological assessment.

While there is interest in the use of alcohol interlocks within this framework, there are some barriers to overcome. First, as is the case in many EU countries, legislation requires that drivers must demonstrate their ‘fitness to drive’ before being eligible to be relicenced. There are also implementation issues to consider. Most importantly, individual German states are responsible for the implementation of driving licence regulations, meaning there is no national agency with the authority to manage the program. There are also questions about whether and where alcohol interlocks would fit within criminal or administrative law. Currently, there is no legal foundation for an offender program. As such, there is only voluntary preventive use of interlock devices by very few transport companies in Germany.

To begin to address these issues, an experimental, multi-year alcohol interlock study was proposed.

Hypotheses that will be tested as part of the study include:

- > Interlock participants have lower DWI recidivism rates than non-participants.
- > Rehabilitation programs reduce recidivism rates (also post-removal of the device) and support behavioral change with respect to alcohol consumption.
- > Recidivism is more likely among alcohol addicts than among alcohol abusers. There is also a difference between these two groups in their drinking behavior and alcohol-sensitive biomarkers.
- > The assessment of driver fitness based on uniform federal assessment criteria predicts recidivism for the three-year period following de-installation of the device.

The first study will involve the use of four experimental groups compared to three groups of controls. The second study will examine a range of outcome measures including drink driving recidivism (measured using the Central Index for Traffic Offences), changes in alcohol consumption (measured through psychological questionnaires and toxicological screening) and changes in attitudes towards alcohol (measured through psychological questionnaires). It is anticipated that the study will take approximately seven years to complete.

**Austria.** There have been several changes to drink driving laws in Austria in the past 25 years. Beginning in 1988, the use of breathalyzers was introduced. Ten years later in 1998, the illegal BAC limit was reduced to 0.5. Then in 2006 the government introduced the use of roadside screening devices. Finally, in 2011 the first government-funded alcohol interlock projects were undertaken, and in 2012, government grants were issued for the installation of these devices.

There have been multiple alcohol interlock pilot projects in Austria. The first pilot test began in September 2011. This six-month pilot was designed to assess levels of acceptance among drivers and transport companies. A brief survey of drivers revealed that:

- > 60% say the device is easy to use;
- > it only takes a few days to get used to the device; and,
- > 70% expect improvement of road traffic safety.

Results from companies were also positive with respondents reporting that:

- > 50% were in favour of certain legal provisions;
- > 34% were in favour of introduction on voluntary basis; and,
- > 16% were in favour of standard use in buses and lorries.

There are some important recommendations emerging from this study. First, it was suggested that alcohol interlocks be implemented in sectors with high driver responsibility (e.g., school transport) and that this be a criterion that is considered as part of the award of contracts. It was further recommended that the

Austrian Road Safety Board (KFV) officially recommend that it be mandatory that alcohol interlocks are installed in all vehicles with higher driver-responsibility (e.g., dangerous goods, school buses).

Austria also conducted a pilot program for repeat offenders to gauge the effectiveness of alcohol interlocks in driver rehabilitation, to verify their usability for everyday use, and to draft recommendation and measures

As part of this pilot program, repeat alcohol offenders (who were voluntary and unpaid) installed an alcohol interlock in passenger cars for 12 months, with the costs of participation being covered by participants themselves (estimated to be € 1,100). The pilot program lasted 24 months. These offenders also participated in a probation program that was part of the pilot. In particular, this program involved a reduced period of licence revocation, special support for high risk and recidivist drivers to encourage behaviour change, regular supervision using consulting, support and mediation, as well as a mentoring component. Offenders were required to install the device, undergo frequent supervision appointments, make no attempt to drive under the influence, attend medical and authority appointments, and participate in educative and awareness raising courses. Study results revealed some key benefits to participation, including:

- > Incentive to change drinking and driving habits;
- > Opportunities to drive legally that can prevent social stigma (due to loss of licence) and maintain employment; and,
- > Increased ability to manage behaviour through organizational and consulting supervision.

The results of these pilot programs, and the experiences gained with alcohol interlock devices will be beneficial to promote and support larger alcohol interlock programs in Austria.

**Australia.** There is a significant research project<sup>4</sup> underway in Australia to explore options to extend the coverage of alcohol interlock programs nationally. This initiative is motivated due to the high level of success of interlock programs in changing drink driving behaviours among offenders and reducing the risk of alcohol-related crashes. Hence, there is interest in exploring opportunities to extend the use of interlocks to a wider segment of the driver population, including corporate fleets, buses, taxis and trucks as a quality assurance measure; and perhaps the broader driving population on a voluntary basis.

The focus of the project is to investigate opportunities to increase the application of interlock programs beyond drink driving, and to analyze barriers and enablers related to the wider application of interlock fleets. Study methods include: developing a matrix of existing Australian and New Zealand interlock policies including a comparison with overseas jurisdictions; to compose a literature review on the effectiveness of interlock programs for offenders and non-offenders; to analyze issues, barriers and enablers for extending the coverage of interlock programs among the driving population; and, to identify implementation options for Australian and New Zealand licencing authorities.

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<sup>4</sup> AUSTROADS Project SS1754

As part of this project, interlock programs across the country have been summarized and are briefly described below.

- > **Queensland.** This state has a high urban density along the southeast coastline. There is a distinct distribution of non-indigenous residents living in urban areas, and indigenous residents living in remote areas. The program began in August 2010 and it is a mandatory program that is delivered administratively. The interlock period begins once the licence disqualification period is completed. Offenders must complete either 12 or 24-months depending on their offence. The program includes a financial assistance scheme. Offenders with a BAC greater than .15, that fail to submit to an alcohol test, that are convicted of dangerous driving under the influence of alcohol or that have two or more drink driving offences in a five-year period are eligible for the program.
- > **New South Wales.** Drink driving is a factor in approximately 19% of fatal crashes in the state, with 70% of fatal drink drive crashes occurring in rural/country areas. The interlock program began in September 2003. The program is voluntary upon application to the court at the time of sentencing. Participants receive a reduced disqualification period and the minimum period of participation is 12 months. Consultation with a doctor is also required. Offenders with a BAC of .08 or higher, or those who refuse or fail to submit to an alcohol test (first offence) or who have two or more drink driving offences in a five-year period are eligible for the program. The program is also supported by a drink driver education program.
- > **Victoria.** More than 35,000 interlock driver licence conditions have been imposed with approximately 90% of these drivers subsequently fitting an interlock. The program was implemented in 2002 and is mandatory. The interlock is a judicially-imposed sanction and the interlock period is determined by the court. The program includes a performance-based exit component that requires an application to the court. Offenders with a BAC of .15 or more for drivers over 26 years old with a full licence, who have a BAC of .07 or more for drivers with a full licence, who have a BAC of .07 or more for probationary drivers and drivers under 26 years old, who have two or more drink driving offences in a five-year period, or who fail to submit to an alcohol test are eligible for the program. The program is supported by clinical assessments and drink driver education.
- > **South Australia.** Approximately 2,700 new offenders are eligible to enter the program each year. South Australia implemented the first interlock program in the southern hemisphere in 2001. A review of this program led to the launch of a new and improved program in 2009. The program is mandatory and administratively imposed. Offenders must serve a disqualification period followed by an interlock period equivalent to the disqualification period. Offenders can exit the program following 90-days violation-free. Offenders are also subject to a 'fitness to drive' assessment if the interlock period reaches three years. Offenders that have a BAC of .15 or more, that fail to submit to an alcohol test, or that have two or more drink driving offences in a five-year period are eligible for program participation. In addition, the Regulator monitors and provides feedback to participants prior to the commencement of the 'clean' period. The program is being reviewed to identify further enhancements to supplement the AUSTROADS review.

- > **Western Australia.** An interlock program has been under consideration since 2003. A demonstration project using alcohol interlocks to address repeat drink driving offenders in remote communities of the Pilbara is currently being conducted. The program is supported by a rehabilitation program.
- > **Northern Territory.** Between 2003 and 2007, a total of 244 people lost their lives on Northern Territory roads and alcohol was a factor in 48% of these deaths. An interlock program was implemented in 2009. It is a mandatory program with voluntary participation which can also be court-ordered. The interlock participation period ranges from six months to three years. If offenders decide not to have an interlock installed, the disqualification period is extended to cover the interlock period. Eligible offenders have a BAC of .08 or more and two more drink driving offences, have failed to submit to an alcohol test, or are driving with alcohol present with a 0.0 alcohol condition (e.g., commercial drivers, young drivers). The program is supported by a drink driver education course.
- > **Tasmania.** From 1996 to 2005, 9% of serious casualties involved drink driving. Of these crashes, young road users aged 16-25 represented 41% of all serious casualties involving alcohol. In 2011, serious crashes in Tasmania involving drink driving rose to 11%. Consultation with key stakeholders is underway and a tender for the program is forthcoming. It is proposed that the program be mandatory and is administratively imposed. Following a licence disqualification period, an interlock period is served. The minimum installation period is 15 months and participants must complete 180 days without violations prior to exiting the program. Offenders that have a BAC of .15 or greater, who fail to submit to an alcohol test or two or more drink driving offences in a five-year period are eligible for participation.
- > **Australian Capital Territory (ACT).** Approximately 1,500 people are caught drink driving in the ACT each year and almost a third of these are repeat offenders. An interlock program is under development and it will be supported by a mandatory alcohol and drug awareness course for drink and drug drivers.

## SPOTLIGHT ON LEADERSHIP



(Based on presentations by Bo Lönegren, European Forum on Interlocks, Toby Taylor, OK Board of Tests for Alcohol and Drug Influence, Iain Cameron, Office of Road Safety, Western Australia)

Many jurisdictions are moving forward with the implementation of alcohol interlock programs. However, there is substantial diversity in how this is being accomplished, both across and within jurisdictions. This is due, in part, to vast differences that exist across systems of transportation, licencing and health as well as differences in infrastructure and program authorities.

**Europe.** In European countries, as in most jurisdictions, policymakers and politicians are frequently tasked with making decisions that shape how alcohol interlock programs develop and evolve. In reality it can be cumbersome to read, interpret and draw meaningful conclusions from scientific reports. This problem can be further compounded in European countries since programs are quite distinct, yet much of the available research has been conducted in North America, meaning it is not necessarily directly relevant to EU programs.

In order to begin to overcome this gap, two years ago some European countries (Norway, Sweden and Finland) came together to establish relationships and learn from each other. Since then, this initiative has gained momentum and last year it expanded to include more countries from Northern Europe (The Netherlands and France). In 2012, a growing number of countries have joined these meetings including Belgium, Germany, Poland, Lithuania, Russia and others. This meetings of jurisdictions has become known as the European Forum on Interlocks and it has focused primarily on sharing implementation experiences and discussing common barriers. In the coming months, it is anticipated that this Forum will identify strategic priorities and efforts that are needed to support the development of interlock programs across Europe.

**United States.** In the United States, similar initiatives are underway as jurisdictions reach out to each other to learn, to discuss shared challenges, and to develop solutions. There is a growing need for coordination in light of the interlock market in the U.S. which includes 14 manufacturers in the US market and rapidly evolving sophisticated technology and device features. In addition, more than 279,000 devices were installed in 2012, and interlock legislation and/or programs now exist in all 50 jurisdictions. Of note, the administrative rules in each of them are unique.

In response, program administrators have come together to form a national association recognized as the Association of Ignition Interlock Administrators (AIIPA; [www.aiipa.org](http://www.aiipa.org)) in 2012. This is the first initiative of its kind in North America. Their vision is to help improve traffic safety through a reduction in the

incidence of impaired driving by helping create or improve ignition interlock programs. Its mission is to provide leadership to the alcohol interlock community by promoting best practices, enhancing program management, and providing technical assistance to improve traffic safety by reducing impaired driving.

On a more practical level, the purpose of this new association is to develop and improve alcohol interlock programs, and to support its members in relation to the development of best practices, cross-jurisdictional issues, training and research needs, and collaboration with partners.

Core activities that are planned for 2013 include a training institute and conference. Other projects include identifying priority issues, establishing a Technical Working Group (TWIG), a simulator repair course, developing standardized vocabulary for interlock devices and best practices for programs and strategies to begin to create reciprocity across jurisdictions.

**Western Australia (WA).** This jurisdiction is the second largest province in the world. It is home to 2.3 million people, many (1.74 million) of whom live in Perth, the largest and most densely populated urban area. This state is also rapidly growing (about 2.2% annually) and it is estimated that the population will grow by 400,000 persons by 2017. There were 192 road deaths in 2010 or 8.4 deaths per 100,000 population (compared to 6.1 in Australia).

It is geographically diverse and includes metro, regional and remote areas with many different types of road users including passenger vehicles, heavy trucks and vulnerable road users. While road deaths have been declining, much more progress is needed. Data reveal why crashes occur, where they occur and how to prevent them. In brief, 60% of deaths occur in regional areas (mostly run-off-road), and 60% of serious injuries occur in urban areas (mostly intersections). Each year there are approximately 200 deaths and 3,000 injuries, meaning that for every death there are about 15 serious injuries. Fatalities and injuries pose an enormous burden on public health and the community, estimated to be \$2.6 billion annually, in addition to the immeasurable emotional cost to victims and families. Regional WA remains a particular challenge, with fatality rates equivalent those reported in developing countries.

In response, the Government formed a Ministerial Council on Road Safety to tackle this issue. The Council includes Ministers representing police, education, health, planning, sport, recreation, transport and local government. A subset of this Council is the Road Safety Council which was established by the Road Safety Council Act 2002 to provide independent advice and evidence-based recommendations to Government. The Road Safety Council is also comprised of Road Safety Council Advisory Groups that provide active and reactive specialist advice on road safety issues. The focus of activities is to develop a long-term view of the issue, to examine research as well as to partner with key stakeholders and build relationships with the community to share implementation.

Western Australia's road safety strategy (2008-2020) relied upon traditional approaches based upon education, enforcement and engineering. Despite a downward trend, the level of road trauma was unacceptable and the improvements achieved remained behind leading Australian States. For this reason,

the next big step forward for WA was a Towards Zero approach in which death and serious injury were not acceptable by-products of using the roads. This approach was based upon the two fundamental principles of the Safe Systems approach: 1) that humans are not infallible and make mistakes and errors of judgement at times; and, 2) humans have a limited tolerance to physical impact forces. Hence the long-term goal in WA was to focus collective efforts as a community to reduce road trauma and create a legacy of an inherently safe road transport system for future generations.

In the past few years there have been a number of achievements as a result of this approach:

- > vehicle sanctions introduced in 2009 that provided significant operational experience and high rates as detection;
- > improved technology in police vehicles to identify driver licence status;
- > compulsory blood analysis pursued in package of legislative amendments;
- > trial of voluntary interlocks in a remote community underway;
- > penalty charges and roadside disqualifications (>.08); and,
- > \$4M enhancement of drink driving enforcement capability approved for 2012/13.

Some of the lessons learned included the following

- > It is necessary to understand the complexity and challenges posed by the legislative and regulatory context.
- > There needs to be a strong community and political focus on law and order.
- > There are negative consequences for being viewed as 'soft' on drink drivers.
- > Champions (such as the Road Safety Council) play a critical role.
- > There can be a 'catch 22' between concept approval and need for detailed business plans and operations details.
- > It is essential to account for the use of new technology in terms of understanding it and also recognizing consequences such as regional risk of access and unintentional stranding of drivers.
- > The value of community education and engagement, and working with the media are paramount.
- > Engaging and briefing all key stakeholders from the start has immense benefits.
- > Be proactive when asked to compromise but be clear on essential core components.
- > Develop clear communication plan to manage complexity.



## REHABILITATION EFFORTS AND DRINK DRIVING OFFENDERS

(Based on presentations by Kaarlo Simojoki, Espoo A-Clinic Foundation (A-Clinic Foundation), Dr. Matthijs Blankers, Amsterdam Institute for Addiction Research, Jean-Pascal Assailly, IFSTAR (France))

**Treatment clinics.** The Espoo A-clinic in Finland undertakes alcohol dependence / intoxicant abuse assessments / evaluations that may take between three and nine months and consist of visits every three to four weeks. In total the average patient makes between five and seven visits during which they may see a physician one or two times, and a nurse between three and five times.

The assessment is divided into three separate components. The first part consists of substance abuse / dependency mapping; the second part involves the selection of tools to manage substance use, particularly in relation to traffic behavior and information about substances and their effects on driving; and the final step involves completing the evaluation and planning possible further treatment. A medical certificate is also provided to the police, as the police issue driving licences in Finland.

During each visit patients complete a questionnaire about substance use and take a breath alcohol test. In addition, every four to six weeks biomarkers are tested (MCV, GT, ALAT, DST). They also have an meeting about the alcohol interlock.

A total of 90 different patients were assessed in 2010-2011 who included patients with drug use, different types of alcohol offenders and professional drivers. The average assessment time was 250 days and 63 medical certificates were issued. Among these offenders the main substance abused was alcohol (71.1%). Other substances included drugs (20%), and polysubstance abuse (7,8%) and prescription medication (1.1%).

There are some important challenges to delivering treatment services to this population. Of importance, their treatment needs change quickly and are varied. Not only are there often other substances used in addition to alcohol, but mental disorders are also common and there are differences between younger and older offenders. Another problem relates to the assessment of patients and their assignment to a primary care versus a specialized unit, particularly because their complete treatment needs are not always recognized. There are also financial challenges in terms of cost and what patients must pay for services. Unfortunately, the alcohol interlock device is not as easily affordable for some patients. Finally, many patients find it difficult to commit to assessment and are forced to attend. Moreover, the predictive value of the assessment is low in many cases.

On a positive note, the assessment and the alcohol interlock meeting provides a good opportunity to motivate patients to seek treatment. There are patients who require treatment even they would never drink-drive again. Anecdotally, there is some sense that all offenders could benefit from an alcohol interlock that could be removed following a specified period with no positive breath tests or after a voluntary assessment/ treatment period. This may contribute to a lower recidivist rate and better treatment adherence.

**Internet-based treatment opportunities.** While there has been much attention focused on partnering traditional treatment interventions with alcohol interlock programs, limited attention has been paid to the emergence of internet-based treatment opportunities. As such, these interventions warrant exploration to gauge their potential feasibility and effectiveness as a component that could be leveraged to strengthen interlock programs

There are two types of programs that are generally available. The first type is referred to as internet self-help (IS). This type is a stand-alone, non-therapist involved, fully automated, self-guided treatment program. It is cognitive behavioural or motivational interviewing based but no counsellors are involved in delivery. These programs provide unrestricted access for everyone.

The second type is referred to as internet therapy (IT). It is based on the same cognitive behavioral or motivational interviewing protocols, but treatment exercises are extended and include up to seven synchronous text-based chat-therapy sessions lasting 40 minutes each over a period of ten weeks (i.e., these programs are counsellor-guided). Participants complete a homework assign prior to each chat, which has a different theme.

In order to explore the effectiveness of these two interventions, a randomized control trial was conducted involving a self-referred, non-clinical harmful drinking population in Netherlands. The study assessed 1,720 participants for eligibility. Among the 832 deemed eligible, 205 participants were randomly assigned to an internet therapy, an internet self-help program or wait listed (i.e., a control group). The study looked at intervention outcomes at three months and six months. Participants in the internet study group were female (51%) with a mean age of 42. Approximately half of them had education equal to or less than a Bachelor degree and 81% had a paid job.

There were two primary outcome measures:

- > Self-reported alcohol consumption (standard drinks) during the prior seven-days measured at baseline and then at three- and six-month follow-ups; and,
- > Treatment response which was defined as drinking within the British Medical Association's guidelines for safe drinking and having less than 10% deterioration using a range of instruments such as the Alcohol Use Disorders Identification Test (AUDIT).

With few exceptions, the baseline characteristics of participants did not differ significantly among the three groups involved in the trial. Participants who received internet-based therapy reduced their alcohol

consumption three months after randomization more than the wait-list controls, as had participants who received internet-based self-help. While no support was found for the hypothesis that after three-months participants receiving internet-based therapy would show larger drinking reductions than those receiving internet self-help, after six months the former participants did show larger reductions than the latter. The same differences between the groups at both three and six months were also found for reductions in alcohol-related problems and improvements in life. It was concluded that both internet-based therapy and self-help are effective interventions in reducing problematic alcohol use. Of importance, larger effects were obtained for internet-based therapy than for internet-based self-help.

In summary research shows that internet-based self-help interventions without professional contact are effective in curbing adult problem drinking (in high-income countries) according to a meta-analysis of these interventions. There is research evidence to support the efficacy of internet-based interventions for alcohol problems, and therapist-led strategies appear to have larger (long-term) effects.

In terms of their potential applicability to alcohol interlock program participants it appears that the threshold for participation is low. More importantly, it is ubiquitously available and low cost (compared to face-to-face interventions). While, this research was conducted with a relatively well-functioning target population, it appears to be worthwhile to further explore the applicability of these types of interventions with interlock programs as they may well be an important resource to improve outcomes and still keep program costs manageable.

**Looking forward.** To garner the best outcomes from interlock programs, it is essential that program structures and delivery mechanisms account for the most recent research findings that can inform our knowledge of drink driving offenders. It is equally important to draw upon science that provides insight into factors that contribute to recidivism among this population, and the effectiveness of alcohol interlock programs. Collectively, this knowledge is essential to strengthen current delivery mechanisms. At the same time, these research findings challenge us to better clarify the purpose of alcohol interlock programs and to determine how 'optimal outcomes' are defined. Highlights from recent research discussed at the Symposium in relation to these important issues are briefly summarized below.

**What has been learned about drink driving offenders?** Research has greatly improved our understanding about drink driving offenders in the past three decades. Key findings include:

- > Age and sex are two characteristics that are intimately linked to drink driving offending. Males account for a majority of drink driving offenders although women represent a growing population of concern.
- > Young drivers (aged 16-24) are also common among drink driving populations. Generally speaking, drivers 'age out' of this phenomenon after age 40, however there are some drivers who persist in this behaviour into their 50s and 60s.
- > Women are also often detected with very high-BACs that are comparable to male drivers. Two explanations that provide insight into this behaviour involve the biological vulnerability of

women (who metabolize alcohol differently than males) and their psychological vulnerability (desire to engage in male behaviours). In this regard, the use of self-report data are limited as drink drivers may be motivated to under-report their involvement with alcohol.

- > Other characteristics related to drink driving include alcohol misuse behaviour, co-morbidity involving mental health and drug issues, lifestyle and family factors, and deficits in executive cognitive function which can contribute to risky decision-making.
- > There are also cultural factors and norms that play an important role in shaping behaviour. For example, research suggests that drivers who take risks believe that their peers also engage in this behaviour more frequently than they do, hence they perceive that their own risk-taking is acceptable. One possible interpretation of this finding would be the bias of socially desirable responding; meaning that drivers are less keen to admit “deviant” behaviors for themselves than for others.

Road safety research has also demonstrated that there are three main predictors of drink drive behaviour. First, drivers who believe that their friends engage in drinking and driving, or believe that their friends believe this behaviour is acceptable, are more likely to drink and drive themselves. However, it has also been shown that the illegal BAC limit is a factor, and as BAC limits are lowered, even drivers who drink excessively will reduce their drinking before driving. In other words, even though these drivers continue to be over the illegal limit, they are ‘less’ over the illegal limit than they would have otherwise been with a higher BAC limit. However, research also reveals that a limiting factor in this equation is the drivers are often unable to accurately estimate their BAC, meaning that even if they are aware of the illegal limit, they are still unable to gauge their alcohol consumption in terms of estimating a BAC.

**What has been learned about recidivism?** Perhaps most importantly, research has underscored that recidivism is hard to measure. There are significant variations in definitions and time frames measured, to say nothing of gaps that exist in data collection. With regard to recidivism, research findings emerging over the past decade have challenged well-established ideas and approaches regarding how drink drivers are managed. Some of these findings are briefly described below.

- > Offenders are more likely to change their behaviour and avoid recidivism when interventions are better targeted to ensure that they are ready to change their behaviour at the time that the intervention is applied. However, most offenders are in a ‘precontemplation’ stage, meaning that they do not perceive a need to change their behaviour and they are unlikely motivated to do so.
- > Despite the wealth of screening and assessment tools that have been designed to help better identify the risk and needs of drink drivers and ensure they are appropriately managed, there are still significant problems associated with accurately predicting recidivism among this population. So while many programs are driven by a mandatory assessment, the reliability and validity of these approaches is limited.

**What has been learned about alcohol interlock programs?** While there have been a number of evaluations of interlock programs around the world, the focus of such evaluations has often been on

reductions in recidivism, with less attention being devoted to understanding what factors strongly influence offenders to change their behaviour and refrain from drink driving.

Other interesting findings from evaluations include:

- > A lack of start failures does not mean that the alcohol problem is solved ; it may just be that offenders adapt to the device while it is installed. This may not be that surprising given that it is easier for offenders to spontaneously change their driving behaviour as opposed to their drinking behaviour.
- > The implementation of programs is complex and frequently involves multiple stakeholders with sometimes conflicting priorities. There is a critical need for communication and negotiation between various stakeholders for programs to operate effectively.
- > Interlocks are tools to control and monitor offenders, however the installation of the device itself is insufficient to reduce risk in the long-term.
- > When offenders demonstrate that they are unable to separate drinking from driving, a long period of program participation is often recommended, however this may be insufficient. The use of graduated responses in which monitoring or treatment interventions become more intensive are rare, but may actually prove more effective.

Most recently, an evaluation of the alcohol interlock program in France provided some very interesting insight into offender behaviour. When asked which elements of the French program were most useful in helping offenders modify their behaviour, offenders responded as follows:

- > the passage of the law (26%);
- > the alcohol interlock device (19%);
- > the intervention (28%);
- > follow-up by the team (17%); and,
- > fear of further sanctions (10%).

Of some importance, some of these behavior modification processes may preempt others; for example, increased awareness may be obtained in one day while environmental re-evaluation or reinforcement management may take much longer.

Perhaps the main challenge moving forward in the management of drink driving offenders to determine who to better reconcile the desire to rehabilitate this population with the punitive environment in which such programs are often delivered. To this end, the findings described above underscore some important considerations that can help improve the implementation of interlock programs, and highlight potential directions by which this can be achieved,

First, better efforts are needed to match heterogeneous drink driving offenders to programs that acknowledge differences in age, addiction, other types of violations, and lifestyle. This is true not only for interlock programs but also for all drink driving countermeasures. Second, better understanding is needed

of effective ways to link treatment interventions to interlock programs, and to determine the ability of these interventions to address underlying psychological and biological mechanisms. Efforts are also need to gauge any interaction effects associated with linking interlock data to medical and psychological follow-ups and to treatment interventions, and also to measure the overall effects on recidivism.

In this regard, brief interventions are particularly well-suited for adaptation to the delivery of remedial programs. These interventions are easily tailored to individuals, including recidivists, and are non-authoritarian. This means that interventions can more easily account for offender deficits and anomalies and are likely to be better received than traditional interventions. Research also suggests that contingency management can be effective, and that positive reinforcements can help to promote engagement and adherence to treatment and behavioral change. Hence these strategies hold promise to strengthen interlock programs and warrant further research.

Despite considerable progress during the past two decades in better understanding the value of alcohol interlock programs, some important questions remain.

- > Who are the most suitable participants for interlock programs? Initially it was believed that such programs were most appropriate for persistent drink drivers, but program populations now include high-BAC and first offenders. Program populations have since further expanded to target alcohol dependent patients and professional drivers, with an eye towards young drivers as well as all drivers. Yet to pursue this goal, the overarching question that remains is how to best engage these different populations in alcohol interlock programs. In this regard, the development of voluntary versus mandatory programs must be carefully considered. While voluntary programs frequently suffer from low participation rates, it is unclear how to appropriately apply mandatory programs to regular driving populations. Road safety associations may play an important role in this regard.
- > As alcohol interlock programs increasingly target new populations of drivers, there are important questions regarding how to best differentiate these programs according to driver population. Of equal importance, it is not known if there are limits to expanding driver populations.
- > The issue of cost continues to be an ongoing concern in relation to alcohol interlock programs despite limited evidence of the magnitude of the population for whom cost is an issue. The cost of program participation is of greater concern in the European market (as compared to North America) and questions regarding who pays and for what kind of program must be addressed. One solution involves indexing the cost on the driver's income or the family income, which has been done in relation to speeding in some countries, but this is not deemed politically acceptable in all European countries.

**What are we trying to effect?** In conclusion, much more research to investigate optimal program implementation strategies is essential to advance the field. More work is needed to gauge where interlock programs best fit in systems of licensing and/or criminal justice, effective installation periods for different

types of offenders, responses to start failures (if any), and how best to monitor and treat these populations appropriately.

And pressing questions still remain. Consensus surrounding what measures of success should be utilized to determine the effectiveness of programs is needed. Should the core focus of programs be placed upon drink driving recidivism, reductions in drink driving crashes, increases in program participation rates or driving exposure? At the same time, changes in alcohol use, knowledge, attitudes, driving behaviours, employment and quality of family life also warrant attention. While these questions will not be easily resolved, it is critical that stakeholders explore and discuss these issues to provide direction for the field.

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# CONCLUSIONS

There is no doubt that strong political leadership is imperative to make interlock programs a priority and a reality across jurisdictions worldwide. Continued attention to this issue is needed to further extend this leadership across borders to encourage cooperation and coordination across North, American, European, Australian and other jurisdictions. Important headway has been achieved in this regard, but persistent efforts are much-needed to ensure that progress is ongoing.

This symposium clearly underscored the importance of law enforcement as an effective and essential component of interlock programs both to manage drivers within a jurisdiction but also across jurisdictions. It is vital that governments further leverage policing organizations across countries to establish partnerships and linkages and ensure sustained efforts to share information and coordinate enforcement initiatives.

A series of presentations at the symposium also demonstrated the success of Finland's experience and what can be accomplished with leadership, communication and coordination across government organizations, and the incorporation of interlock activities and priorities into existing practices. Of equal importance, the government in Finland has placed a strong focus on evidence-based approaches as illustrated by their pursuit of evaluation to help them shape and improve existing interlock operations. Such follow up to increase knowledge and understanding of program effects serve to further advance the field.

Many jurisdictions spoke of common implementation challenges. These experiences have provided important insight into the many facets and complexities associated with implementation of alcohol interlocks in different environments. In particular, they underscore the importance of recognizing systemic and contextual factors that can hinder implementation efforts, yet also highlight opportunities to address them. For example, many jurisdictions have struggled with the use of driver licence codes such that law enforcement can readily identify interlock-restricted drivers. Discussion of this shared challenge provided insight regarding ways it could be addressed to benefit all jurisdictions. Other areas where jurisdictions are engaging in collaboration include data protection and establishing linkages with treatment strategies.

Other outcomes of this event clearly demonstrate that the value of current and modern public awareness campaigns and the work of grassroots organizations are paramount to shape public opinion, to influence political decision-making and generate leadership. They serve a critical role in leveraging media and garnering support for interlock programs.

The symposium also suggested that there are important opportunities for innovation that cannot be overlooked. One practical example of this is the exploration of online treatment components to determine

their potential feasibility and benefits in relation to alcohol interlock programs. Another example is the potential to use feedback from drivers (e.g., offenders, professional drivers, alcohol dependent patients) participating in interlock programs to guide implementation efforts and identify strategies to increase participation. Ultimately, this international event has provided the field with greater understanding of potential opportunities to strengthen alcohol interlock programs and continue to make programs more robust for more populations of drivers.





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