Evaluation of Ontario’s Drinking & Driving Countermeasures

SUMMARY REPORT

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This report summarizes an evaluation undertaken by the Ministry of Transportation’s Road Safety Research Office to assess the impact of all legislative and regulatory countermeasures implemented by the Government of Ontario to reduce alcohol-impaired driving in the province. Although much research has been done on individual drinking and driving countermeasures across the globe, this assessment of every countermeasure enforced by a single large jurisdiction is the first of its kind. We hope that these findings will provide an evidence-based framework to guide future research and policy considerations.

OVERVIEW OF COUNTERMEASURES
Ontario’s drinking and driving countermeasures target novice-classed drivers, young drivers, and members of the general driving population who drive with unsafe blood alcohol concentrations (BAC). Some of these countermeasures involve sanctions that are administered upon detection of an offence, while others occur upon conviction.

OVERVIEW OF EVALUATION
For each countermeasure, research questions were defined based on the intended and/or expected impact of that countermeasure. The resulting questions can be divided into two broad categories: those investigating general deterrence (i.e., effects of a countermeasure on the behavior of all drivers) and those investigating specific deterrence (i.e., effects of a countermeasure on the behavior of those drivers who have been subject to it). Questions of general deterrence were addressed using collision outcomes, such as the number of drivers involved in alcohol-related collisions, or the number of injuries and fatalities resulting from such collisions. Questions of specific deterrence were addressed with behavioural outcomes, such as repeated drinking and driving incidents and driving while suspended incidents. Research questions were addressed using a mix of study designs and analytic techniques. Data were derived primarily from the Ministry of Transportation’s Licensing Control System and Accident Data System.

OVERVIEW OF RESULTS
90-day Administrative Driver’s Licence Suspension

Administrative Driver’s Licence Suspensions (ADLS) were first introduced in December 1981 and authorized police to immediately suspend a driver’s licence for 12 hours if the driver has a BAC at or above 0.05%. In November 1996, this policy was amended; it was extended to 90 days, applied to drivers with a BAC at or above 0.08% or who refused to provide a breath sample, and noted on the driver’s record. Results indicate that the amended ADLS policy decreased the number of major or fatal injuries from alcohol-related collisions by 21% and decreased the number of re-offending drivers by 66%.
Warn Range Sanctions

Warn Range Sanctions were introduced in May 2009 and targets drivers with a BAC above 0.05%. For a first detection, drivers have their licence suspended for three days. Upon a second detection within a five-year period, drivers will have their licence suspended for seven days and be required to take a one-day remedial alcohol education course. On a third detection, drivers will be subject to a 30-day licence suspension, two-day remedial alcohol treatment, and a 6-month ignition interlock condition. A $150 licence re-instatement fee must be paid by the driver in order to resume legal driving privileges. Results indicate that the warn range sanctions decreased the number of drinking drivers involved in collisions by 15% and decreased the number of injuries and fatalities from alcohol-related collisions by 17%. The effect of escalating sanctions on a driver’s propensity to drink and drive could not be evaluated due to data limitations.

Long Term Vehicle Impoundment

The Long Term Vehicle Impoundment was introduced in February 1999. This program applies to vehicles being operated while the driver is under a driving prohibition as a result of a CCC conviction. Long Term Vehicle Impoundments are administered according to the number of times a vehicle has been impounded, with the first impoundment lasting 45 days followed by 90- and 180-day impoundments for a second and third occurrence within two years. The vehicle owner or plate holder must pay storage and towing costs, which vary depending on the police service. Upon conviction, the driver must also pay a fine as determined by the court. This countermeasure was associated with a 19% decrease in the number of Driving While Prohibited incidents committed by previous offenders.
Seven-day Vehicle Impoundment

Seven-day vehicle Impoundments were introduced in December 2010 under the legal authority of HTA s.55.2 and s.41.4. This countermeasure targets drivers with a BAC over 0.08% (who will also be subject to the 90-day ADLS); who refuse to provide a breath sample; who violate their ignition interlock condition; and who are detected driving during any licence suspension imposed under the HTA. This countermeasure was associated with a 33% decrease in the proportion of drivers convicted for driving during their underlying 90-day ADLS and a 29% decrease in the proportion of drivers who received a second 90-day ADLS in the three months immediately after the end of their first.

Zero BAC Requirements

Zero BAC requirements for drivers were introduced in August 2010 for novice-classed drivers in the graduated licencing system and drivers under 22 years old who are found driving with any detectable BAC. These drivers receive an immediate 24-hour licence suspension and, if convicted, receive an additional 30-day suspension with a fine ranging between $60 and $500.
Novice-classed drivers are subject to escalating sanctions, whereby a second offense in a five-year period results in a 90-day suspension. For a third conviction, the novice-classed driver has their licence cancelled and must begin the licencing process again. Zero BAC sanctions were associated with a significant decrease in the number of 90-day administrative driver’s licence suspensions and Warn Range suspensions incurred by young drivers. In addition, those subject to the Zero BAC suspension as a result of a conviction were less likely to incur a subsequent warn range or 90-day suspension compared to equivalent drivers who were charged but not convicted.

**Alcohol Education and Treatment Remedial Measures Program**

The Alcohol Education and Treatment Remedial Measures Program was introduced in September 1998. It is a mandatory component of the licence reinstatement process, for all drivers convicted of alcohol-impaired driving, and, starting in May 2009, for drivers who receive repeat Warn Range Sanctions. When first implemented, the program consisted only of an education component. In October 2000, the program was expanded to include assessment and treatment components, and a follow up interview. All steps must be completed before the licence suspension expires in order to have the licence reinstated. Otherwise, drivers receive an indefinite “Failure to Complete Remedial Measures” suspension. The remedial measures program, including indefinite suspension for those who fail to complete the program, was associated with decreased drinking and driving recidivism. Furthermore, the more-involved program (assessment, education or treatment, and follow-up components) was associated with a larger effect than the single-component program (education-only) in reducing recidivism. However, program effectiveness was not observed for drivers over 45 years old, suggesting a need to tailor the program to the participant demographics.
**Ignition Interlock Program**

The Ignition Interlock program was introduced in December 2001. An ignition interlock is an in-car alcohol breath screening device that prevents a vehicle from starting if the driver registers a BAC in excess of a pre-set limit. The device is installed inside the vehicle, near the driver's seat, and is connected to the engine's starter mechanism. To be eligible for the original Ignition Interlock Program, drivers were required to serve the full duration of their criminal driving prohibition and complete the Alcohol Education and Treatment Remedial Measures Program. Once these conditions were met, drivers would have an interlock condition placed on their licence that required installation of an interlock device in any vehicle they operated. Drivers who chose not to install an interlock were not permitted to drive for the duration of their interlock licence condition. The length of the interlock condition depended on the number of prior impaired driving convictions, with first-time offenders receiving a one-year condition, second-time offenders receiving a three-year condition, and third-time offenders receiving a lifetime condition.

The installed interlock is inspected regularly by the service provider every 30 to 60 days. Upon inspection, data from the interlock device on the number and type of fails is downloaded to the service provider's database. Program violations, such as tampering, driving without an interlock, or missing an appointment, increased the condition time and could subject the driver to either criminal or provincial charges. Regardless of whether an interlock device was installed, a driver was required, upon expiration of the interlock condition, to apply to the MTO to have the condition removed from their licence. Otherwise, the condition would remain indefinitely.
Results indicate that the number of drivers who were detected and charged criminally for drinking and driving during their ignition interlock condition was 2.49 times higher for those who did not install the device compared to those who did install. There was no effect on recidivism after the end of the ignition interlock condition.

**Reduced Suspension with Ignition Interlock Conduct Review Program**

The Reduced Suspension with Ignition Interlock Conduct Review Program (“Conduct Review Program”) was introduced in August 2010. It targets drivers with a first-time alcohol-related criminal driving conviction. This countermeasure modifies the pre-existing program— the Ignition Interlock Program— by reducing the length of the licence suspension period –in conjunction with a reduced period of federal driving prohibition- upon the mandatory installation of an ignition interlock device. While an Ontario driver convicted under CCC s. 253 or 254 for the first time would typically receive a 12-month driving prohibition, followed by a provincially mandated 12-month ignition interlock condition, the Conduct Review Program allows for a reduced prohibition period for eligible first-time offenders. One variant (“Stream A”) allows for a three-month driving prohibition followed by a nine-month ignition interlock condition, while a second variant (“Stream B”) allows for a six-month prohibition followed by a 12-month ignition interlock condition.

Participation in the Conduct Review program requires that the convicted driver be eligible, and that the driver meets certain milestones by certain deadlines. To be eligible for Stream A the driver must plead guilty to their alcohol-related criminal driving charge, and the driver must be convicted and sentenced within 90-days of the offence. If sentencing is not complete within 90 days but all other eligibility criteria are met, the driver is eligible for Stream B. An eligible convicted driver is invited to participate in the Conduct Review program and must subsequently act according to program conditions. In particular, the driver must complete the assessment component of the Alcohol Education and Treatment Remedial Measures Program, provide proof of interlock lease agreement before the end of their driving prohibition, and install the device within 30-days of the placement of the interlock condition.

Should a driver be ineligible for the Conduct Review program, that driver will be subject to the original pre-existing interlock program, referred to here as “Stream C”. Similarly, if an offender fails to meet the obligations of the Conduct Review program or commits a program violation, he
or she is re-suspended, sent to Stream C, and might be subjected to further criminal charges. Drivers in Stream C are expected to install an interlock if they wish to drive. Otherwise, they may simply “sit out” by not installing the device and not driving during the 12-month condition.

As a result of this countermeasure, ignition interlocks increased by 54% and the time period between detection of a drinking driver and subsequent conviction (for those drivers who were convicted) decreased by 146 days. Effects on recidivism after device removal could not be evaluated at this time.

OVERVIEW OF DISCUSSION
Over the last two decades, Ontario has introduced eight countermeasures, all with the same goal of reducing the burden of injury and fatality due to alcohol-related collisions by deterring drinking and driving behaviour. Although implemented in two “batches” approximately 10 years apart, these countermeasures are individually distinct because they target a range of subgroups and circumstances, leverage both general and specific deterrent mechanisms, and take varying forms (i.e., actions on the licence, actions on the vehicle, and actions on the driver). By studying these numerous and varying approaches to deterrence, which have all been implemented in the same jurisdiction, two main themes have emerged, along with additional specific findings.

First, of drivers involved in fatal or injury collisions in 2012, and who were recorded in the Accident Data System as “ability impaired alcohol” or “ability impaired alcohol (over 0.08%)” at the time of collision, approximately 89% had no criminal alcohol-related driving convictions in the previous ten years. Moreover, 87% of such drivers had no roadside 90-day ADLS sanctions in that period. In order to produce maximum road safety gains, drinking and driving countermeasures should be designed so as not to depend on previous drinking and driving detection or criminal conviction for their effectiveness. Instead, countermeasures should
produce general deterrence through their immediacy and perceived certainty. Our results demonstrate that new initiatives should target novel subgroups and/or circumstances with immediate and certain sanctions, or focus on increasing the immediacy and certainty of existing countermeasures. In order for a countermeasure to produce general deterrence, the driving population must be aware of the potential consequence and believe that they are likely to be detected (e.g. Bertelli & Richardson, 2008). Increasing the level of resources dedicated to public awareness of new and existing administrative sanctions, and high-visibility enforcement campaigns would, arguably, be the most beneficial approach to reducing alcohol-impaired driving in Ontario. In this evaluation, we found that licence suspensions were effective at producing general deterrence when delivered administratively at roadside. However, we also note that suspensions provide drivers with an opportunity to drive while suspended.

Second, when the remedial education/treatment requirement was added for those convicted of a CCC s. 253 or 254 offence, no effect was found using population-level collision data. This lack of general deterrent effect was also noted when the ignition interlock program and seven-day impoundment were introduced. All three countermeasures constitute an extra burden on the subjected driver. In the case of remedial education/treatment, the time and financial commitments necessary to complete the program are incurred in addition to the original CCC driving prohibition soloey by sentenced/convicted drivers. In the case of the interlock program, drivers face either the cost of installation and maintenance of the device, or an additional effective suspension, either of which are an addition to the pre-existing CCC driving prohibition. Seven-day impoundments were added on top of the pre-existing 90-day ADLS. All of these changes can be interpreted as an increase in sanction severity associated with being detected for drinking and driving, even though this was not the actual intention for remedial education/treatment or ignition interlock programs. Our results should not be taken to suggest that increases in penalty severity have no effect on population-based outcomes, but they do suggest that such effects are small, if they exist. Thus, even though increases in penalty severity appear to reduce recidivism (e.g. seven-day impoundments), they will not likely impact road safety to the extent that increasing the public awareness and enforcement of currently existing administrative penalties would.

In terms of remedial-type countermeasures, our results have important program implications for education/treatment and ignition interlock programs. In the case of education/treatment, we found evidence suggesting that considering participant characteristics in program design could maximize program effectiveness. In the case of ignition interlocks, our results suggest that installation rates can be improved substantially via incentivization. This is important because interlock devices clearly reduce drinking and driving while installed, and those with an installed device collide at rates similar to the general population. Moreover, there is still no substantial evidence in the literature of enduring effects on recidivism after interlock device removal, suggesting the need to maintain or increase the duration of an interlock condition, while further reducing barriers to installation.
Remedial-type countermeasures such as the Alcohol Education and Treatment Remedial Measures program, Ignition Interlock Program, and the Reduced Suspension with Ignition Interlock Conduct Review Program should also be simplified and harmonized as much as possible. This would reduce the operational burden for administrators and likely improve participant adherence. As a specific example, many drivers have had difficulty finishing remedial education/treatment requirements quickly enough to receive an interlock condition (and, hence, to be eligible to drive) at the intended time. Some simple program modifications, including reconsideration of which components must be completed before a driver can receive an interlock condition could remedy this issue. Furthermore, a program that interacts in multiple ways with other existing programs is difficult to evaluate. This is especially true for evaluations that require a high degree of rigour for inferring causality, which often depend on consistency of program design over time.

As a final note, a commitment to alcohol-related countermeasures should prioritize evaluation and, thus, ensure that the proper infrastructure (e.g., reliable and valid data measures, data sources, and databases) is in place to enable such work. This is required to continue moving toward a culture of evidence-based policy making, emphasized in the Drummond Report (2012) and elsewhere.