

.05 BAC Laws: Evidence & Practice

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Robyn Robertson
President & CEO
Traffic Injury Research Foundation

TRAFFIC INJURY RESEARCH FOUNDATION

TIRF

Applying research to the real world.





About TIRF

TIRF is registered charity providing the following services:

- > Research on road crashes
- > Program and policy development
- > Program and policy evaluation
- > Knowledge transfer



Giving Communities | Safe Roads Home



The **vision** of TIRF is to ensure people using roads make it home safely every day by eliminating road deaths, serious injuries and their social costs.

TIRF's **mission** is to be the knowledge source for safer road users and a world leader in research, program and policy development, evaluation, and knowledge transfer.



Overview

- > How big is the impaired driving problem?
- > What does the .05 research evidence tell us?
- > How is .05 applied in Canadian jurisdictions?
- > Is the Canadian approach to .05 effective?
- > What are the larger implementation and contextual issues associated with .05?





NHTSA FARS Data

- » According to the National Highway Traffic Safety Administration (NHTSA), the overall road fatality rate decreased from 2016 to 2019 before rising in 2020 and again in 2021.
- » There was a 14.2% increase in alcohol-impaired driving fatalities from 2020 to 2021.
- » Fatalities involving a driver with a blood alcohol concentration (BAC) of .08 or greater accounted for 31.2% of total motor vehicle crash (MVC) fatalities in 2021 (or 13,384 lives lost).
- » Early estimates for 2022 indicate a leveling-off of fatalities with a 0.3% decrease from 2021.



TIRF USA RSM 2023

- > The Road Safety Monitor is an online public opinion survey.
 - » Random, representative sample of 1,525 U.S. drivers aged 21 years or older completed poll in October 2023.
 - » Fact sheet summarizes key findings regarding the prevalence of alcohol-impaired driving, reasons people drink and drive, and characteristics of these drivers.

TIRF USA Road Safety Monitor 2023
Alcohol-impaired driving in the United States
Milad Delavary¹, Craig Lyon¹, Aldina Mesic¹, Carl Wicklund², Ward G.M. Vanlaar¹
& Robyn D. Robertson¹ | January 2024

KEY FINDINGS

- > Approximately one in five (21.4%) of drivers admitted driving when they thought they were over the legal limit and 8.4% admitted driving often or very often when impaired by alcohol.
- > The most common reasons given by drivers who drove when likely over the legal limit for alcohol were that they could drive carefully (23.1%) or were okay to drive (12.6%).
- > The percentage of drivers stating they relied on safe rides as an alternative strategy to avoid alcohol-impaired driving in 2023 has increased to 81.6%, and an estimated 199 million drivers, a level not seen since before the COVID-19 pandemic.

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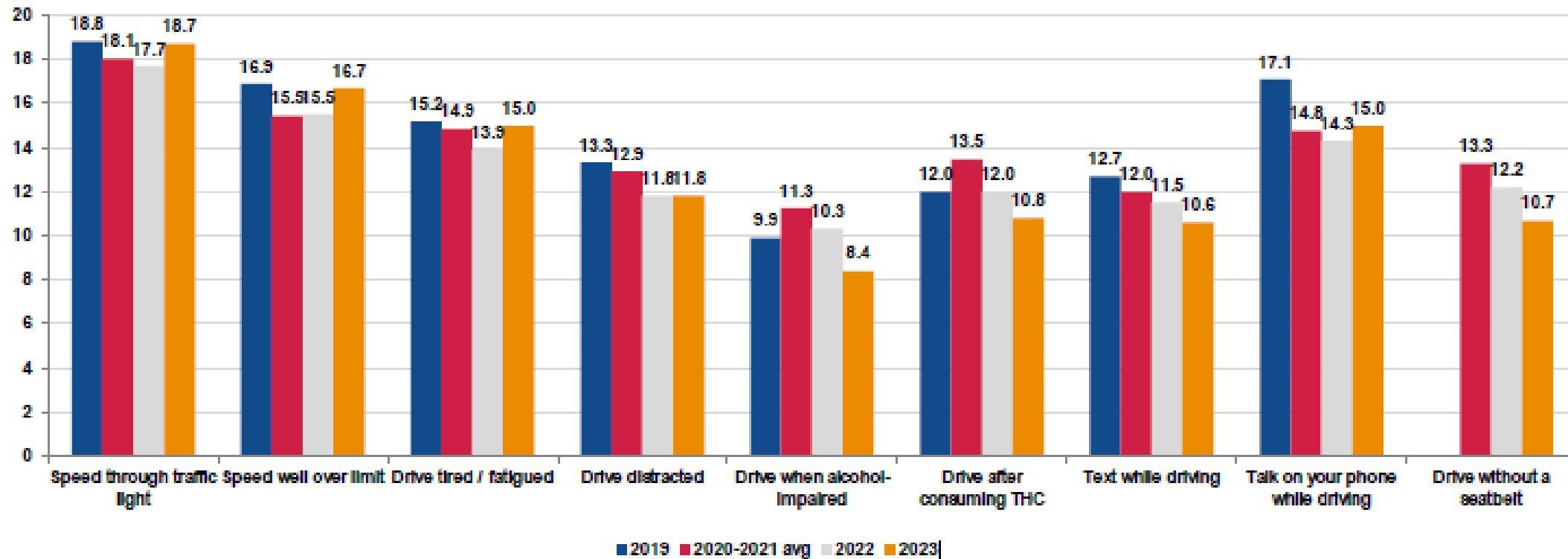
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TIRF USA ROAD SAFETY MONITOR 2023 | ALCOHOL-IMPAIRED DRIVING IN THE UNITED STATES 1



RSM 2023 results

Figure 4: Percent of U.S. drivers who often or very often engage in dangerous driving behaviors | 2019-2023





RSM 2023 results

- > **Where does the issue of alcohol-impaired driving sit on the public agenda?**
 - » Drivers were asked how concerned they were about various societal issues.
 - » Approximately **3 in 4 (76%)** of U.S. drivers reported they were very or extremely concerned about the economy.
 - » Comparatively, **70%** of U.S. drivers reported they were very or extremely concerned about alcohol-impaired driving.
 - » At least half of respondents were concerned about road safety (**58%**) in general.



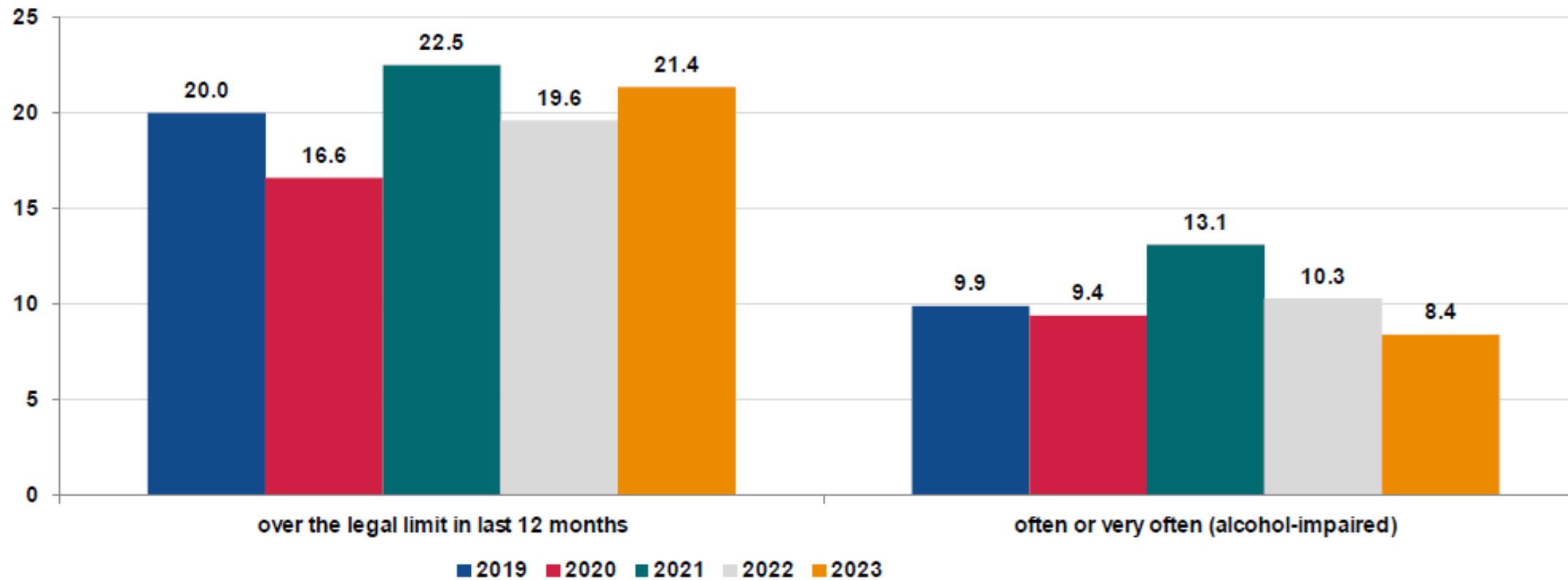
RSM 2023 results

- > **Is alcohol-impaired driving a major road safety problem for U.S. drivers?**
 - » **81%** of U.S. drivers reported alcohol-impaired driving as a serious problem, an increase from 2022 (77%).
 - » Only texting and driving was reported as a greater road safety issue than alcohol-impaired driving, as **83%** of drivers believed this was a serious problem.
 - » Roughly half (**55%**) of respondents believed marijuana-impaired drivers were a serious problem, an increase from 51% in 2022.



RSM 2023 results

Figure 3: Percent of U.S. drivers self-reporting driving over the legal limit for alcohol or driving impaired | 2019-2023





RSM 2023 results

- > **Why U.S. drivers drove when they thought they were over the legal limit?**
 - » **23.1%** thought they could drive carefully.
 - » **17%** believed they were okay to drive.
 - » **14.9%** believed they would not be caught.
 - » **9.2%** drove earlier than planned.
 - » **7.2%** did not think about it.
 - » **7.1%** thought there was no alternative to driving.
 - » **6.2%** were not driving far.



RSM 2023 results

- > **What are the characteristics of respondents who reported driving impaired often or very often?**
 - » Older drivers were less likely to report driving impaired often or very often. From 2018-2023:
 - » 17.8% of respondents aged 21 to 29 years
 - » 20.8% of those aged 30-39 reported this behavior
 - » Among those aged 50 to 59 years approximately 5.8%
 - » 1.8% of those over age 60 reported this.
 - » Males were twice as likely as females to report driving while they thought they were over the legal limit.



RSM 2023 results

- > **What are the characteristics of respondents who reported driving impaired often or very often?**
 - » Persons who received two or more tickets were **six times** more likely to report driving impaired often or very often compared to those who received fewer than two tickets.
 - » Persons who had been injured in the past in a motor vehicle crash were **1.6 times** as likely to report driving impaired often or very often compared to those who had not been injured before.



RSM 2023 summary

- > The prevalence of impaired driving remains high, as does societal concern about the problem.
- > Roughly 1 in 5 (21.4%) of drivers admitted to driving when they believed they were over the legal alcohol limit; approximately 43 million drivers.
- > Roughly 1 in 10 (8.4%) reported driving while alcohol-impaired often or very often, approximately 17 million drivers.
- > Targeted education and enforcement efforts to reduce and prevent impaired driving remain essential to lessen the burden of the issue.
- > New tools, such as lowering the breath alcohol concentration limit, are being discussed to achieve further reductions in fatalities.



.05 research update

- > At .05 BAC, the risk of having a crash increases by 39%.
- > Crash risk rises rapidly over .05
- > For drivers with BACs of .05-.079 g/dL, the relative risk of being in a single-vehicle fatal crash was at least 7 times higher than for drivers with no alcohol in their system (Fell & Voas, 2014).
- > At .08, the risk increases by more than 100% (Fell & Voas, 2014).
- > Increases are exponential at higher BACs.



.05 research update

- > A meta-analysis of 37 international studies examined several effects:
 - > 8 studies showed a 5% decline in non-fatal crash rates although not all studies measured the same BAC reduction
 - > 14 studies examined effects of a reduction from .10 to .08 and showed a 9.1% decline in rates of alcohol-related fatal crashes; 12 US studies reported 8.4%; 1 Canadian study reported 18%.
 - > 11 studies examined reduction to .05 *or lower* showing an 11.1% decline in fatal alcohol-related crashes from lowering BAC to .05.
- > This estimates 1,790 lives saved each year in the US if all states adopted a .05 BAC limit (Fell & Scherer, 2017).



.05 research update

- > There is a strong evidence-based foundation for a BAC limit of .05 or lower.
- > Twenty years of international studies have shown that when a country lowers BAC limits from .08 to .05, alcohol-related fatal and injury crashes decrease between 5% and 10% (Mann et al., 2001; Fell & Voas, 2006).
- > Approximately 100 countries have some type of .05 or lower BAC laws and, while their average alcohol consumption is the same or higher than the US, their proportion of alcohol-related deaths is lower.



.05 research update

- > The lowering of the illegal level of BAC from .10 to .08 resulted in reductions in alcohol-related crashes and fatalities up to 5%-16% (Fell & Voas 2006; 2014).
- > France experienced a reduction from 100 to 64 impaired driving fatalities in a single year after lowering the BAC (Mercier-Guyon, 1998).
- > In Austria, lowering the BAC to .05 decreased alcohol-related crashes by 9.4% (Bartl &, Esberger, 2000).



.05 research update

- > A 2018 study revealed when the BAC is lowered to .05, reductions of 4% to 16% for alcohol-impaired fatalities, injuries, and costs could be achieved under conservative scenarios (Kostyniuk et al., 2018).
- > A .05 BAC law has a broad deterrent effect because it helps prevent drinking drivers from getting behind the wheel in the first place.

.02 BAC	<ul style="list-style-type: none">• Decline in visual functions• Decline in ability to perform two tasks at same time
.05 BAC	<ul style="list-style-type: none">• Reduced coordination• Reduced ability to track moving objects• Difficulty steering• Reduced response to emergency driving situations
.08 BAC	<ul style="list-style-type: none">• Reduced ability to concentrate• Short-term memory loss• Difficulty controlling speed• Reduced information-processing capability• Impaired perception



Research evidence

Research shows reductions in criminal BAC limit can have deterrent effects *under certain conditions*.

- > Multiple evaluations show a reduction in criminal BAC limit from .08 to .05 can have positive effects and reduce alcohol-related fatalities. This evidence is convincing and compelling.
- > Most critical factors are conditions under which these studies were conducted and how legislation was implemented to determine what outcomes may be achievable in the US.
- > What is notable about results from EU and AU is that a BAC reduction was often introduced with intensive, high visibility enforcement, mass media campaigns, and complementary measures such as random breath testing or mandatory driver improvement programs.
 - » In Austria there was a 10% decline in DUI injuries in 1st year but a 25% increase in police breath tests was required to achieve this.
 - » In NSW, introduction was not intensive with media or enforcement and the effects of the law were small, limited to Saturdays and short-lived in the absence of RBT.



Evaluation of Utah's .05 BAC per se law

- > On March 23, 2017, the Governor of Utah signed into law House Bill 155, modifying Utah Code §41-6a-502 to prohibit people 21 and over from operating a non-commercial vehicle with a BAC of .05 or greater, rather than .08.
- > Utah became the first State to adopt an impaired driving per se BAC limit lower than .08.
- > The goal of this study was to conduct a comprehensive evaluation of the impacts of the change in Utah's per se law from .08 to .05.



Evaluation of Utah's .05 BAC per se law

Methods:

- > Data on crashes; impaired driving arrests; and driver knowledge, perceptions, and attitudes toward drinking and driving were examined in addition to NHTSA's Fatality Analysis Reporting System (FARS) data.
- > Statistical analyses focused on changes in the State crash data measures for the 21 months after the law was passed (but not yet in effect), and for the first 12 months after it was in effect.



Evaluation of Utah's .05 BAC per se law

Crashes & fatalities:

- > Time series analyses of the monthly state crash data showed **reductions for almost all the crash- and driver-level measures** (i.e., fewer crashes and lower alcohol involvement) for the 21 months after the law passed, and the 12 months after it went into effect.

Table 1. Estimated Average Monthly Changes for Selected Crash and Driver Measures

	After .05 Law in Effect (12 months)
Measure	Δ%
Crashes	
Total per VMT [†]	-9.6*
Injury (including fatalities) per VMT	-10.8*
Single Vehicle Nighttime per VMT	-7.8
Single Vehicle Nighttime Injury per VMT	-13.7*
Alcohol Positive per VMT	-8.9*
BAC ≥ .05 per VMT	-14.7
BAC ≥ .08 per VMT	-13.7
BAC ≥ .15 per VMT	-9.1
Drivers	
% Suspected Alcohol	-12.5*
% Alcohol Positive	-14.6*
% BAC ≥ .05	-22.5*
% BAC ≥ .08	-22.9*
% BAC ≥ .15	-22.5*



Evaluation of Utah's .05 BAC per se law

Crashes & fatalities:

- > Analysis of FARS data for Utah showed reductions in fatal crashes and overall number of people killed in 2019 (first year .05 law was in effect) compared to 2016 (last full year before law was passed).
- > In 2019, despite increased vehicle miles traveled (VMT), Utah recorded **225 fatal crashes and 248 fatalities**, which is lower than the **259 fatal crashes and 281** fatalities for 2016
- > In comparison to the entire US, Utah had a 19.8% reduction in fatal crashes from 2016-2019, the US had a 5.6% fatal crash rate reduction.



Evaluation of Utah's .05 BAC per se law

Public awareness:

- > A survey conducted by the State found in 2018, 26.6% of drinkers and 12.6% of the non-drinkers thought the limit was .05 even though the law had not yet taken effect.
- > In 2019, 22.1% of drinkers indicated they had, in fact, changed their behaviors once the law went into effect. The most common change was ensuring transportation was available when drinking away from home.



Evaluation of Utah's .05 BAC per se law

Impaired driving arrests:

- > DUI arrest data showed no large spikes in overall arrests or arrests relative to passage of the law. In 2019, there was a **slight increase** in number and proportion of arrests of drivers with BACs between .05 and .079 due to increased enforcement.

Alcohol sales:

- > Alcohol sales in Utah from 2012 through 2018 increased and continued the trend through Fiscal Year 2020 after the law was effective. Similar patterns were observed for sales tax revenues from restaurant, rental car, hotel, and resort sales.



Evaluation of Utah's .05 BAC per se law



U.S. Department
of Transportation
**National Highway
Traffic Safety
Administration**



DOT HS 813 233

February 2022

Evaluation of Utah's .05 BAC Per Se Law

Thomas, F. D., Blomberg R., Darrah, J., Graham, L., Southcott, T., Dennert, R., Taylor, E., Treffers, R., Tippetts, S., McKnight, S., & Berning, A. (2022, February). *Evaluation of Utah's .05 BAC per se law* (Report No. DOT HS 813 233). National Highway Traffic Safety Administration.



.05 legislation update

- > There has been increased interest in .05 bills over the past year and even in recent months.
- > Unlike Utah, several legislators in states have supported legislation and some states have even formed coalitions.
- > States with the most activity recently include:
 - » Washington State has strong support from the Governor, WTC and their coalition although it didn't pass the House or Senate committee, they are well-positioned for next year.
 - » Hawaii is working on gathering votes this week but it is not promising however there is a coalition pursuing this initiative.
 - » California is still working on securing a sponsor and issue is gaining visibility.
 - » Other states have demonstrated interest but no formal attempts.



Administrative .05 in Canada

Existing administrative regime for .05 impaired driving incidents is robust and works extremely well. Drivers are immediately removed from road and subject to escalating measures.

- > All provinces in Canada (except Québec), have ‘*Warn Range*’ sanctions for drivers with a BAC of .05 to .08; in SK it is .04.
- > Generally, administrative sanctions escalate in accordance with repeated incidents.
 - » 1st incident typically includes a monetary penalty combined with an immediate roadside short license suspension of a few days.
 - » 2nd incident typically escalates consequences and may also require the completion of an alcohol education program.
 - » 3rd + include more substantial penalties, longer license suspensions measured in months, as well as an ignition interlock requirement and an alcohol assessment or treatment program.



Administrative .05 in Canada

Administrative laws do not require proof beyond a reasonable doubt, police officers do not testify, grounds to appeal are very limited, and fines must be paid to reinstate license.

- > Consequences are swift and certain which are essential to deterrence. Reductions due to low-BAC laws have been reported in several Canadian jurisdictions.
- > Blais et al. 2015 examined alcohol-related crashes between 1987 and 2010 which showed .05 administrative BAC laws had strong general deterrent effects and were responsible for:
 - » 4.1% reduction in number of fatally injured drivers with BAC levels of .05 or higher;
 - » 3.5% reduction estimated in number of fatally injured drivers with BAC levels over .08;
 - » 4.9% reduction estimated in the number of fatally injured drivers with BAC levels exceeding .15.



Administrative .05 in Ontario

Ontario has administrative sanctions for alcohol and drugs which vary depending on age, license, and level of alcohol/drugs.

- » 1st offense is a 3-day suspension and \$250 fine
- » 2nd offense is a 7-day suspension, education/treatment, \$350 fine
- » 3rd offense is a 30-day suspension, education/treatment, ignition interlock for 6 months and \$450 fine
- » License reinstatement fee of \$281 is paid for every reinstatement
- > Byrne et al. (2016) evaluated deterrent effectiveness of new countermeasures, including lowering the BAC limit from criminal .08 to administrative .05.
- > It showed the implementation of roadside suspensions for drivers with low-BAC levels resulted in 17% decrease in number of persons killed/injured in drinking driver collisions.



Administrative .05 in BC

British Columbia's implementation of its immediate roadside prohibition (IRP) program in 2010 for alcohol, and later drugs, *in essence de-criminalized impaired driving.*

- > In its 1st year, IRP program was credited with reducing motor vehicle fatalities by 40%, motor vehicle injuries by 23% and motor vehicle property damage by 10.5% province-wide, however *actual data was not published.*
- > December 2016 statistics showed 351 lives were saved since introduction of IRP program, representing a 50% reduction in motor vehicle fatal victims related to alcohol.
- > BC had high profile cases with incorrectly calibrated ASDs.
- > Despite the program's success, alcohol-involved driving persists as a leading contributing factor in motor vehicle fatalities in BC, causing an average of 65 deaths each year.
- > Alberta followed BC's lead in 2019.



Administrative .05 in BC

License Suspension in BC – IRP

Approved Screening Device Result	Warn 1st Incident	Warn 2nd Incident	Warn 3rd Incident	Fail (refuse breathalyzer)
Driving Prohibition Length	3 days	7 days	30 days	90 days
Vehicle Impoundment Length	3 days	7 days	30 days	30 days
Vehicle Impound and Towing Fees	\$150+	\$230+	\$680+	\$680+
Administrative Penalties	\$200	\$300	\$400	\$500
Licence Re-Installation Fee	\$250	\$250	\$250	\$250
Responsible Driver's Course	-	-	-	\$930



Implementation issues

How .05 is implemented has important implications for effectiveness. Some considerations include:

- > Traffic enforcement/officer morale are at all-time low. There is uncertainty whether police will support criminal penalties which bring more people into justice system.
- > Police have long been under-resourced/road safety has not been prioritized. Administrative approaches could alleviate burden of impaired driving cases.
- > The implementation of criminal penalties may erode general deterrent effects of existing impaired driving laws *without adequate resources*. It could simply erode focus on higher-risk drivers and reduce likelihood of detection, sending wrong message.
- > Strengthening of implied consent laws would be warranted; or at least the enforcement of these laws which has historically been low; refusal sanctions should be appropriate.
- > Starting with jurisdictions with lower-BAC offenses would be ideal (CO, MI, NY).



Contextual issues

Current conditions in the US may be conducive to pursuing .05 laws.

- > Fatalities have significantly increased, creating pressure on Federal and state governments to adopt new strategies and tools *as well as resource them*.
- > Polls during the pandemic period from 2020 to 2022 showed significant increases in risk-taking by drivers.
- > Driver Alcohol Detection Safety System (DADSS) program is ongoing, but it may take years to achieve full-scale implementation.
- > The popularity of safe ride programs has declined in light of pandemic-related concerns.
- > Many alternatives to driving after drinking are not viable solutions for women due to safety concerns.



**STATUS OF ALCOHOL-IMPAIRED
DRIVING IN CANADA**



The knowledge source for safe driving

Thank you

For more information: robyn@tirf.ca

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