

# Estimating the Harms and Costs of Cannabis-attributable Collisions in the Canadian Provinces

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# About CCSA

- **Vision:** A healthier Canadian society where evidence transforms approaches to substance use.
- **Mission:** To address issues of substance use in Canada by providing national leadership and harnessing the power of evidence to generate coordinated action.
- **Value Proposition:** CCSA was created by Parliament to provide national leadership to address substance use in Canada. A trusted counsel, we provide national guidance to decision makers by harnessing the power of research, curating knowledge and bringing together diverse perspectives.

# National Priorities and Areas of Action



National Framework  
for Action (2005):  
*Collective action for  
collective impact*

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# Background

- The Canadian government has announced plans to legalize cannabis by July 1, 2018.
- In 2012, 10% of Canadians used cannabis in the past year and just under half of cannabis users were estimated to have driven under the influence of cannabis.
- There is increased risk of motor vehicle collision with cannabis use.
- More recent and detailed cost data for driving under the influence of cannabis is needed to inform policy
  - Rehm et al., (2006) cost study
  - Fischer et al., (2015)
  - Imtiaz et al., (2016)

# Study Goals

## Cannabis-attributable motor vehicle collision harms

- To calculate the numbers of people involved in fatal, injury and property damage only motor vehicle collisions attributed to driving under the influence of cannabis in each province by age

## Cannabis-attributable motor vehicle collision costs

- To calculate the economic and social costs associated with these cannabis-attributable deaths, injuries and property damage only harms

# Methodology

## Data for 2012

1

Cannabis  
exposure data

Cannabis risk  
relation  
functions for  
MVCs

Cannabis-  
attributable  
fractions  
(CAFs)

2

Cannabis-  
attributable  
fractions  
(CAFs)

MVC victim  
data

Cannabis-  
attributable  
MVC harms

3

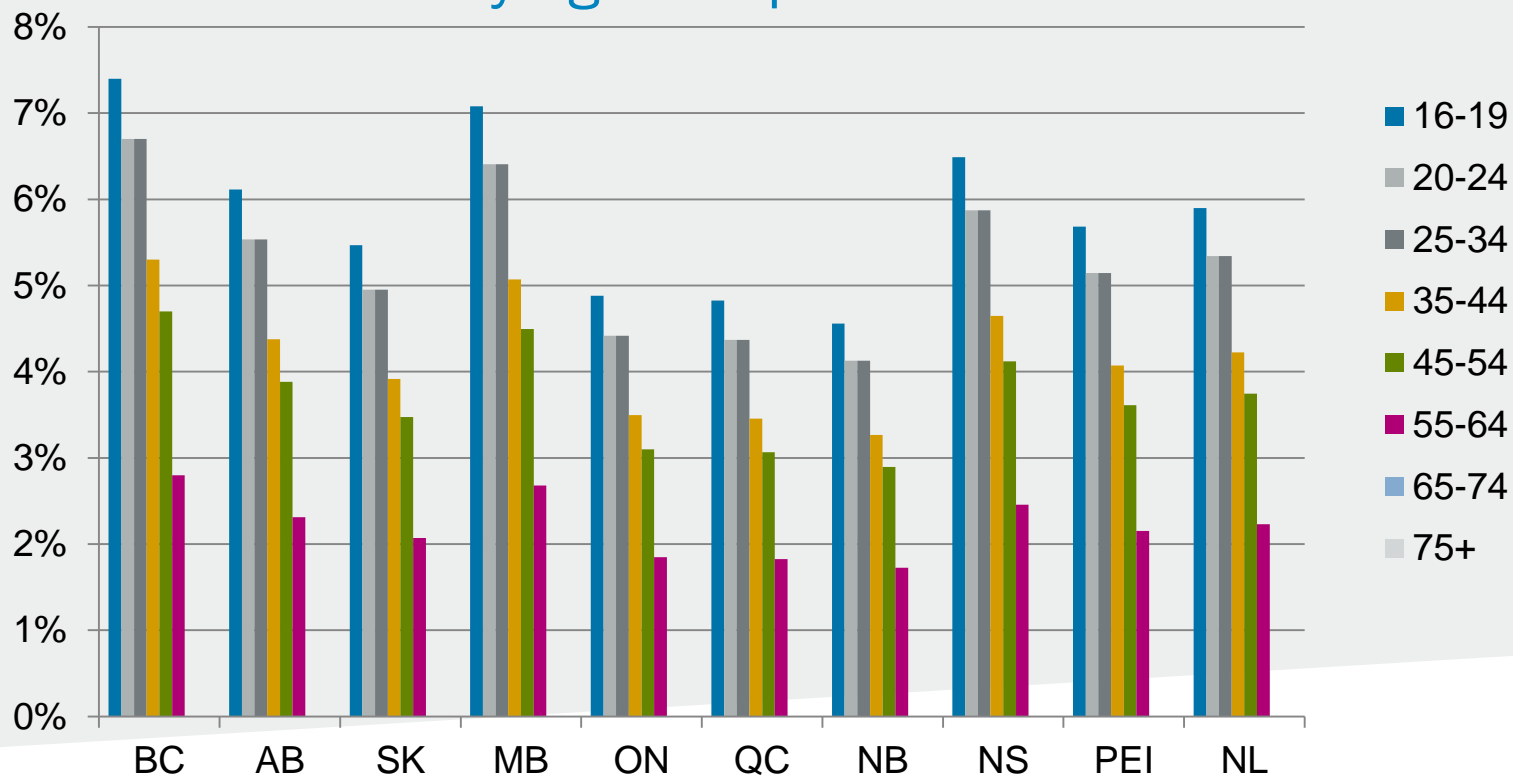
Cannabis-  
attributable  
MVC harms

Cost values by  
MVC outcome

Cannabis-  
attributable  
MVC costs

# Findings: Driving under the Influence of Cannabis

## Prevalence of driving under the influence of cannabis use by age and province





# Findings: Harms

## Cannabis-attributable motor vehicle collisions (2012)

Collision outcome	Number of road users	Number of drivers (%)
Deaths	75 (95% CI: 0-213)	38 (95% CI: 0-109) (51%)
Injuries	4,407 (95% CI: 20-11,549)	2856 (95% CI: 13- 7,486) (65%)
Property damage only involvement	7,794 (95% CI: 3,107-13,086)	6,879 (95% CI: 2,742- 11,550) (88%)

# Findings: Costs

## Cannabis-attributable motor vehicle collision costs by outcome severity

MVC outcomes	Costs (2012)
Deaths	\$638,776,532 (95% CI: 2,163,672- 1,817,022,033)
Injuries	\$372,797,626 (95% CI: 166,4133- 977,071,132)
Property damage	\$83,397,905 (95% CI: 33,241,586- 266,203,832)
Total	\$1,094,972,062 (95% CI: 37,069,392-2,934,108,175)

# Study Limitations

- Single point in time (2012)
- B.C. DUIC generalized to other provinces (no data for territories)
- Minor MVCs under represented
- Risk estimates do not account for dose response

# Conclusions

## Policy Implications

- Explores the extent of the issue
- Informs priority interventions
- Greater focus on youth prevention is needed

## Areas for further exploration

- Focus on younger drivers
- Expansion of roadside data collection

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