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on Substance Use  
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# Canadian Substance Use Costs and Harms 2007-2020

Presentation to CAPE Community of Practice

Emily Biggar, CCSA

Adam Sherk, CISUR

# Presentation Objectives



- Discuss the history and objectives of *Canadian Substance Use Costs and Harms*
- Share key trends in costs and harms uniquely attributable to alcohol, tobacco, and other substances between 2007-2020
- Especially highlight costs and harms caused by alcohol in Canada
- Highlight alcohol policy considerations

# Key Messages

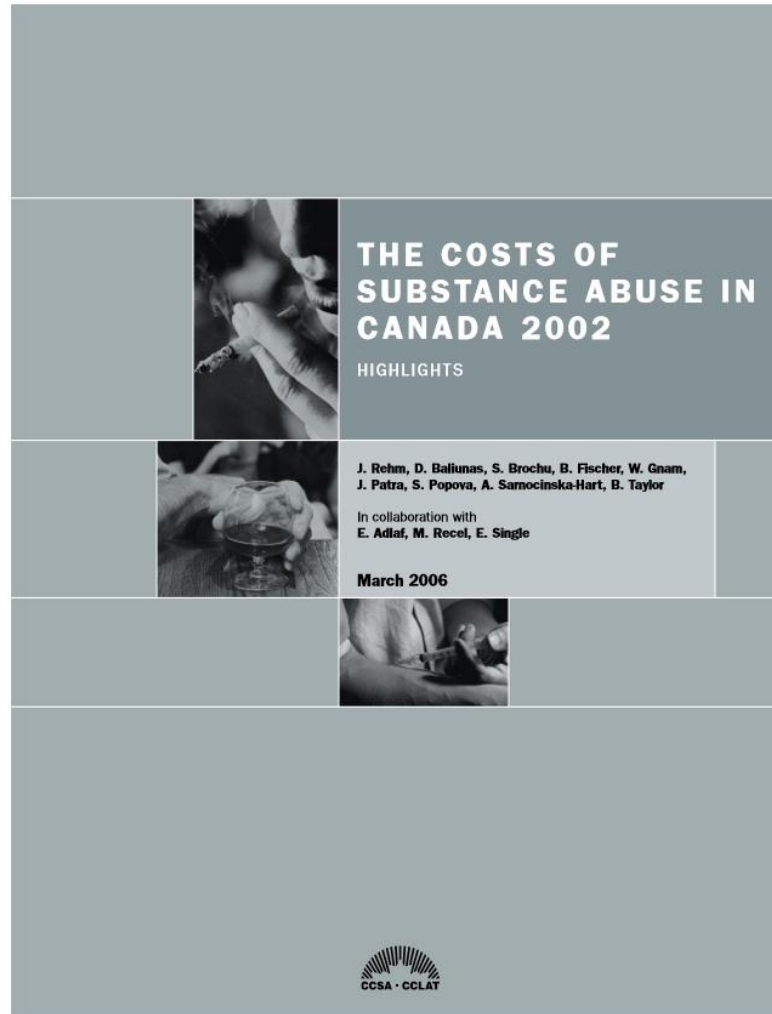


- In 2020, substance use cost \$49 billion and led to the loss of over 200 lives each day
- Alcohol and tobacco, two legal substances, account for the most costs and harms — but trends for these two substances have diverged
- Harms due to opioids have risen in step with the increasingly toxic unregulated drug supply
- Costs have increased the most for stimulants like methamphetamine



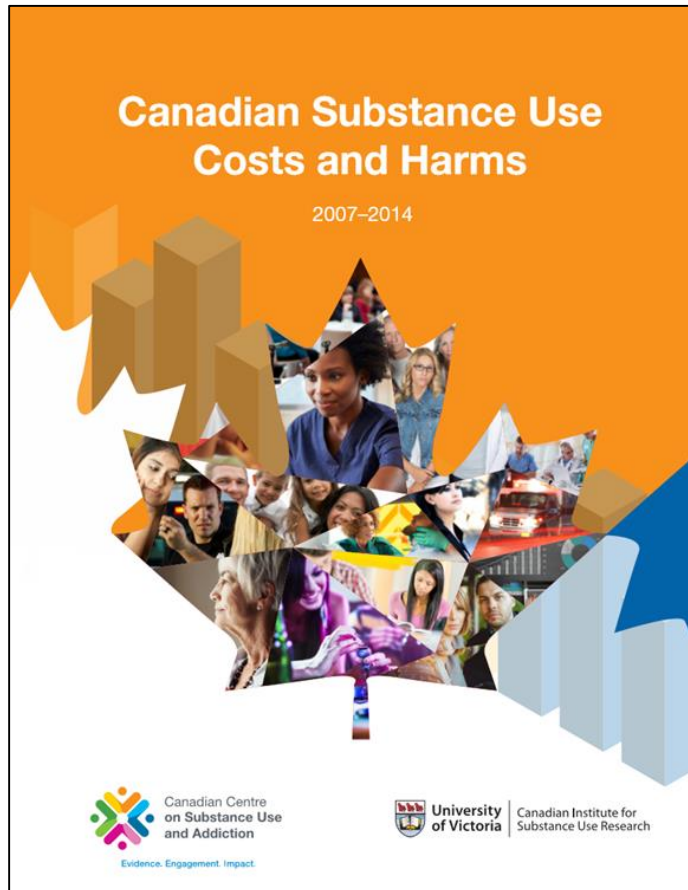
# Project Background

# Background



# Background

2018:



2020:



# Background



## Canadian Substance Use Costs and Harms Scientific Working Group

Canadian Centre on Substance Use and  
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Adam Sherk, PhD  
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# Substance Categories



**ALCOHOL**



**TOBACCO**



**CANNABIS**



**COCAINE**



**OPIOIDS**



**OTHER CNS  
DEPRESSANTS**



**OTHER CNS  
STIMULANTS**



**ALL OTHER  
PSYCHOACTIVE  
DRUGS**

Note: CNS = Central Nervous System.



# Cost Categories

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Healthcare Related Costs



Lost Productivity Costs



Criminal Justice



Other Direct Costs



# Attributable Fraction Methodology



- Some health conditions and events are 100% attributable to SU (i.e., poisonings, impaired driving charges) while others are only partially attributable (i.e., colorectal cancer, homicide)
- Attributable fraction (AF) approach:
  - Identify the condition (or event or indicator) attributable to SU
  - Determine the relationship between the extent of exposure and the indicator
  - Identify prevalence of exposure in the general population
  - Combine information to obtain SU-related AFs

# Strengths to our Approach

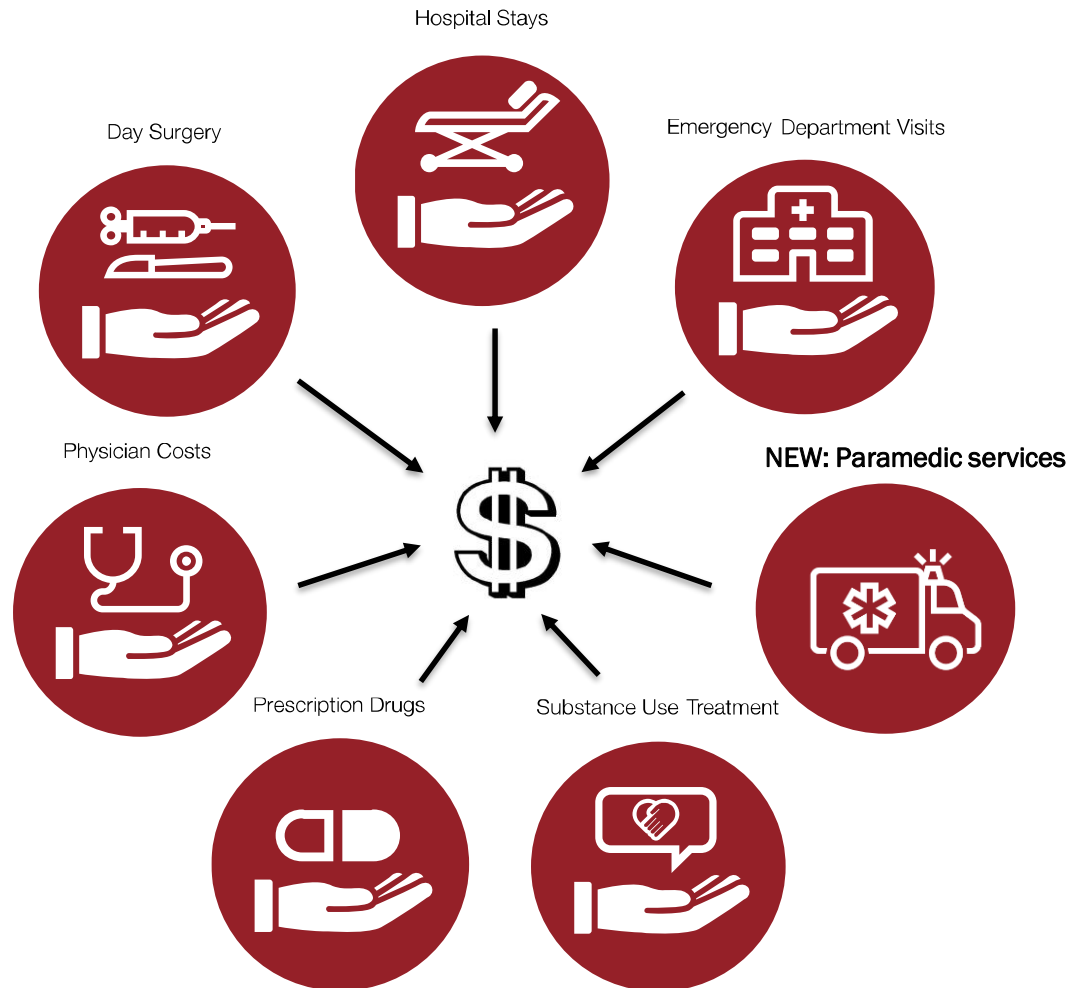


- Collaborated with a large, diverse team (12 members)
  - Subject Matter Experts, Knowledge Brokers, Communications Advisor
- Applied current, internationally agreed upon methods to develop our estimates
- Relied on multiple robust data sources to achieve estimates:
  - All available surveys of SU in Canada
  - Canadian federal offender survey (34,000+ offenders)
  - National healthcare data
- Incorporated suggestions and feedback from previous releases.

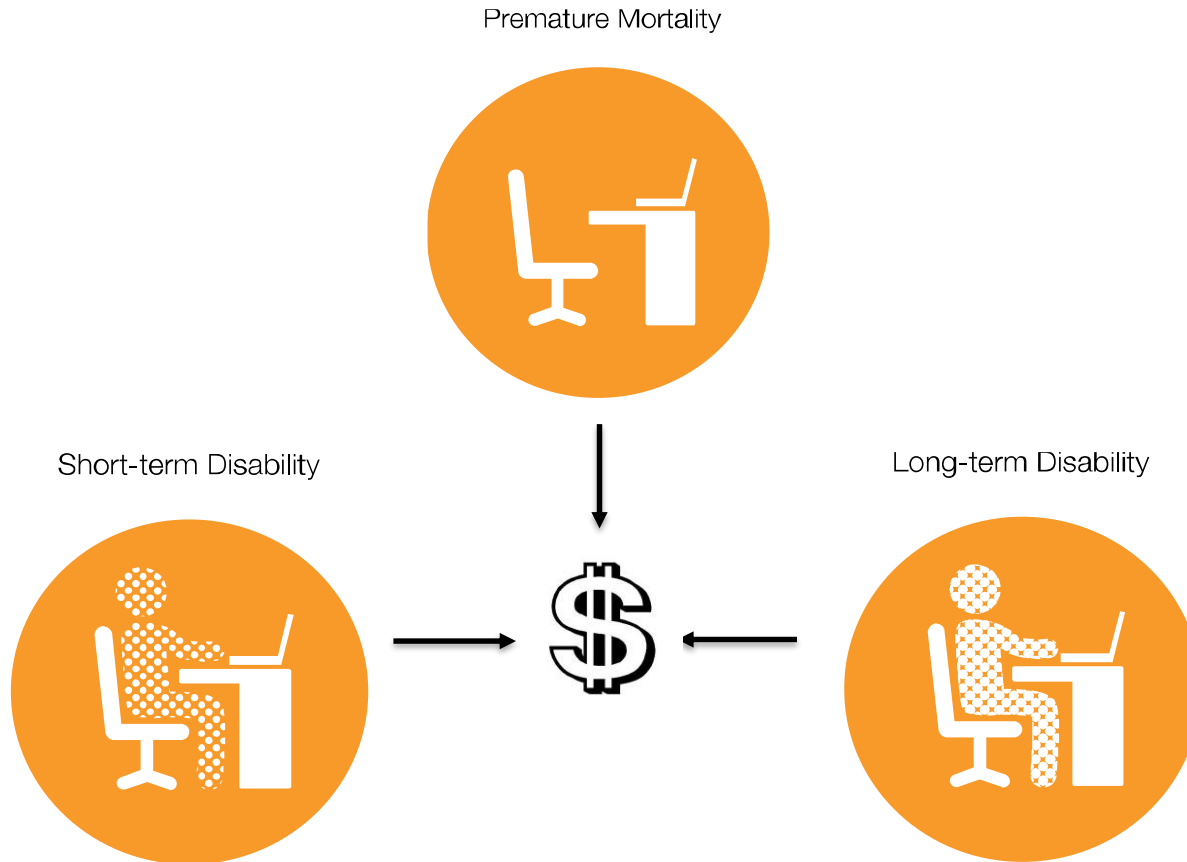


# Cost Categories

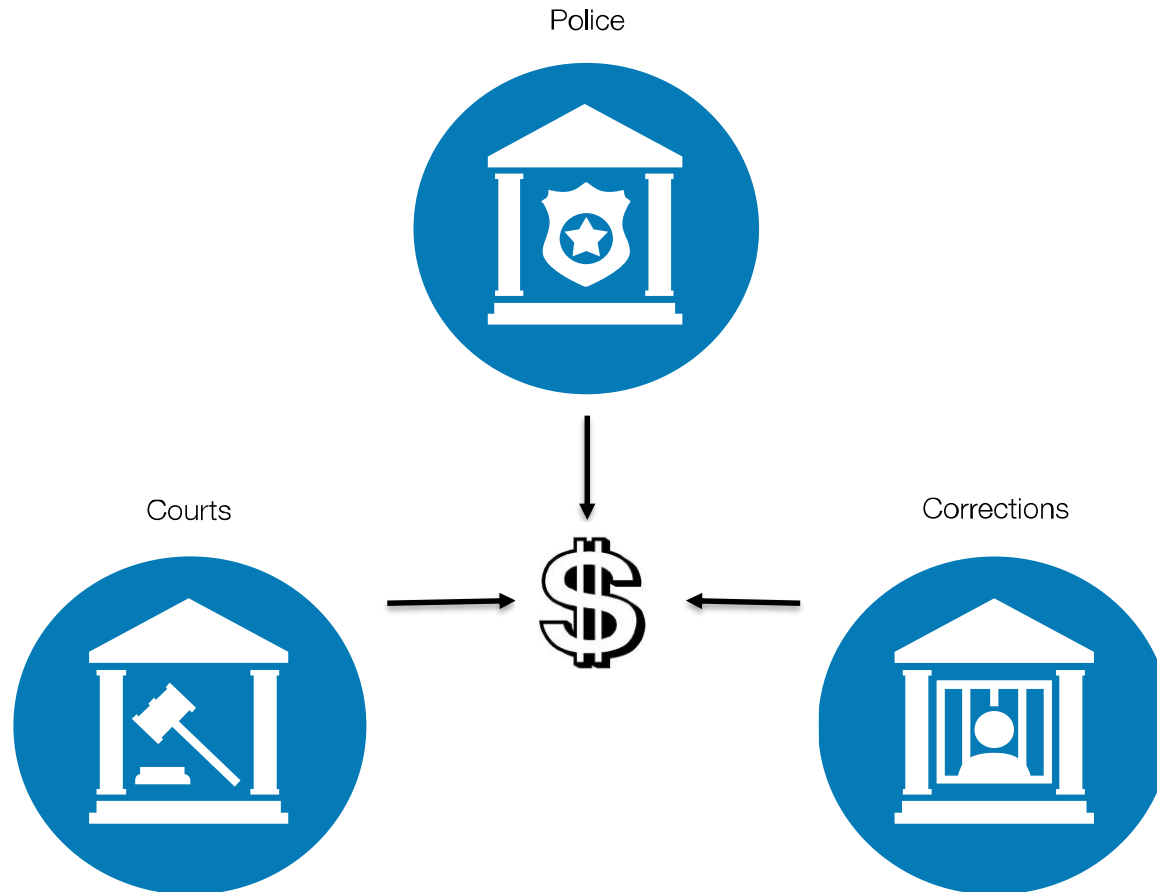
# Healthcare Costs



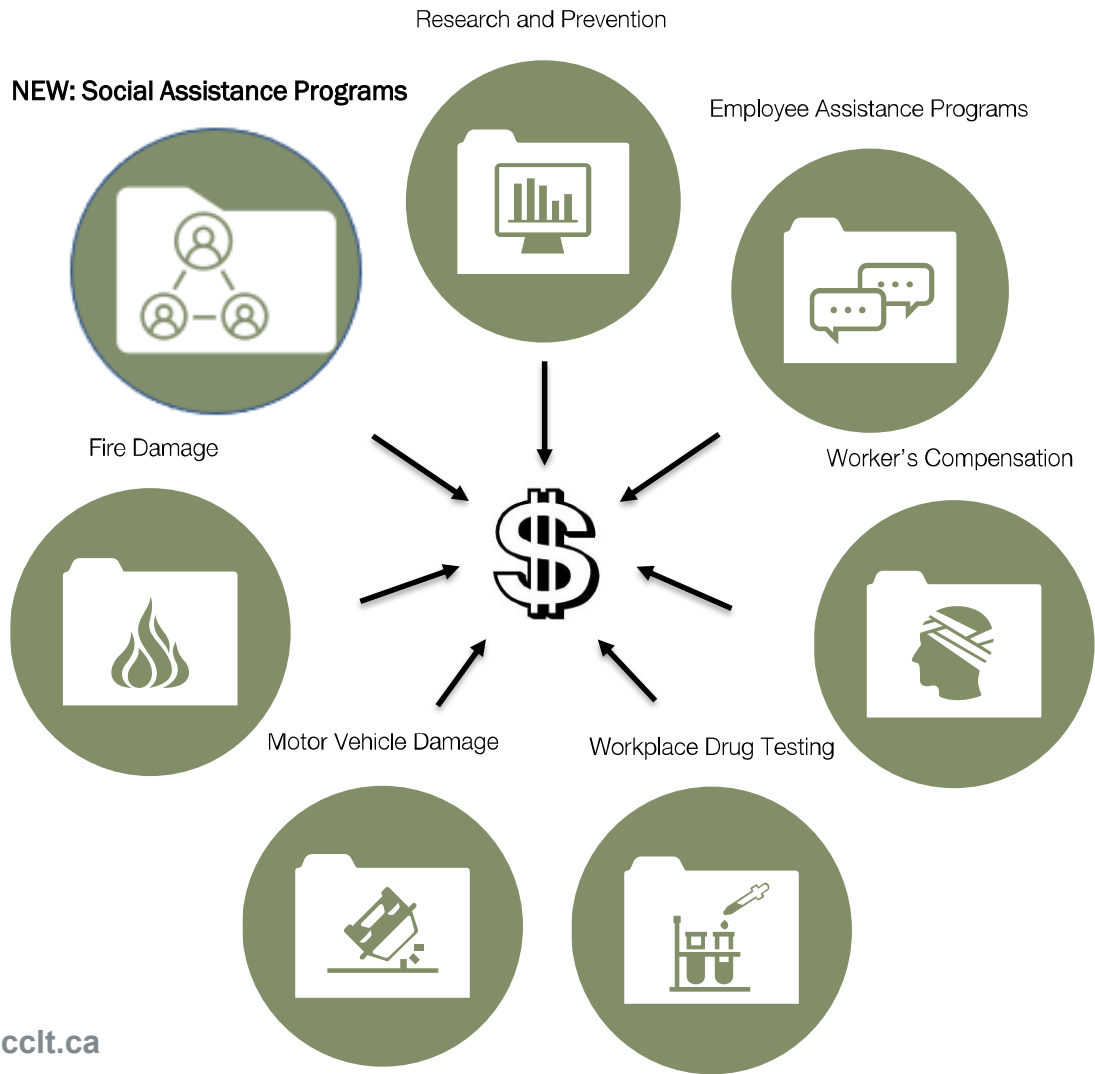
# Lost Productivity Costs



# Criminal Justice Costs



# Other Direct Costs



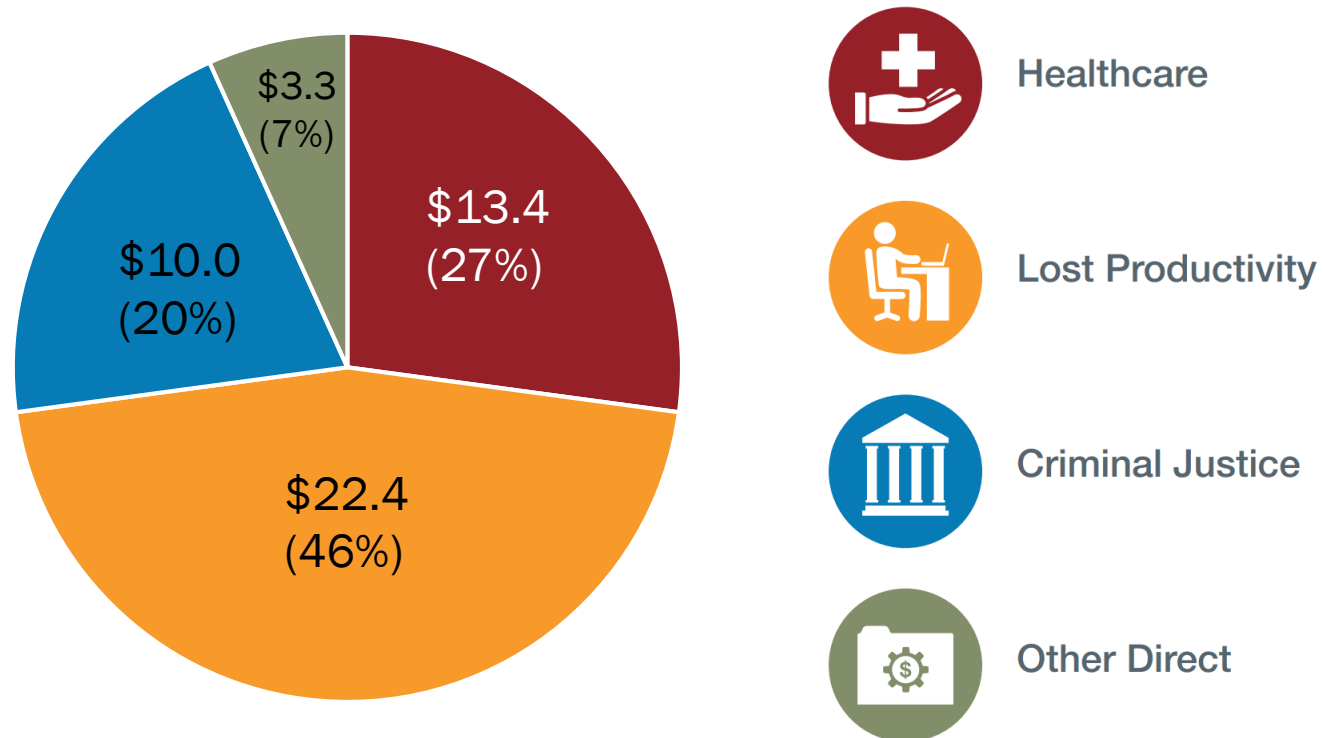




# Findings

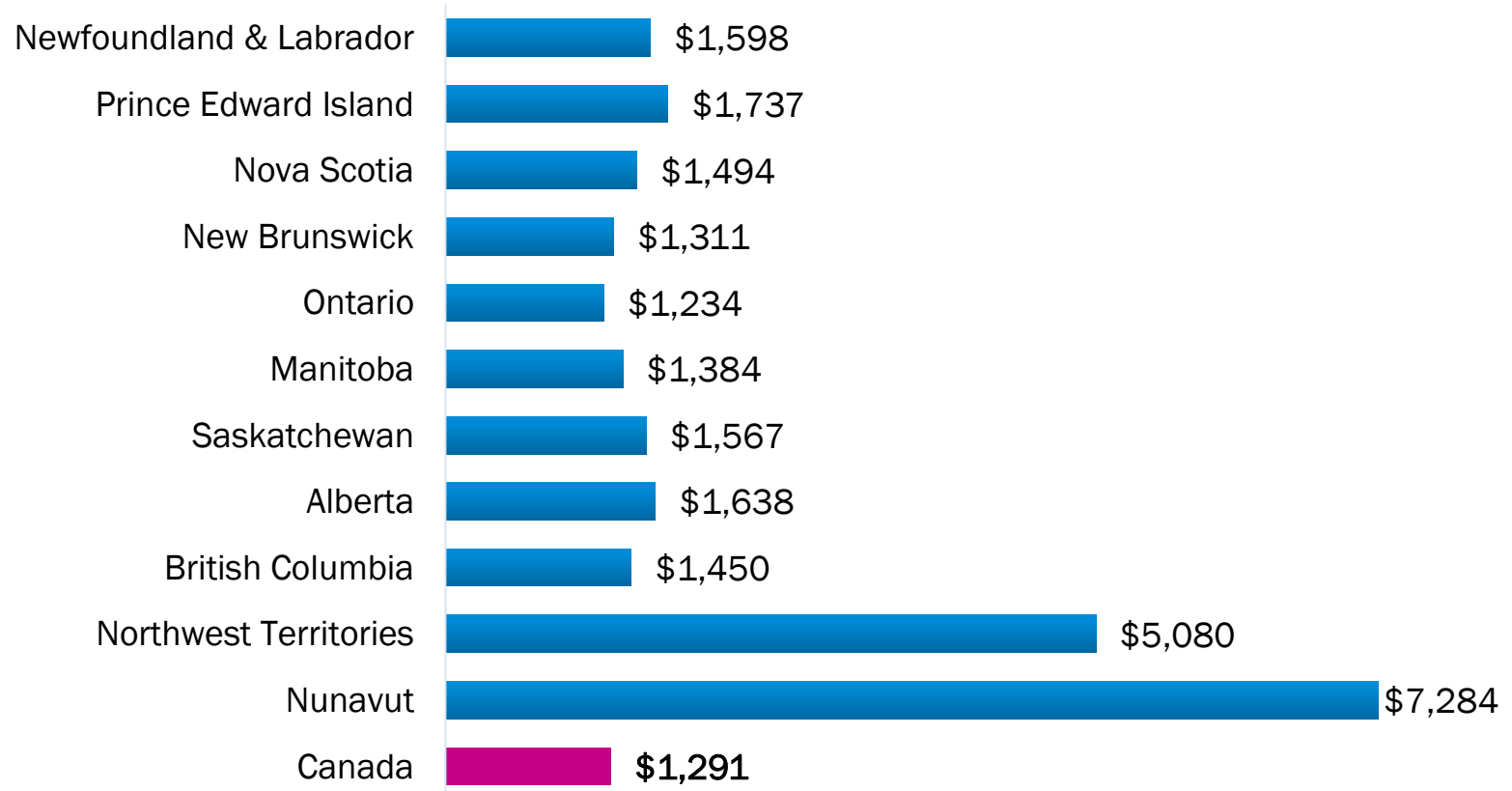
# Substance use cost \$49 billion in 2020

Overall costs (in billions) and percentage of total overall costs attributable to substance use in Canada by cost type, 2020



# Per-person costs are highest in territories

Per-person costs attributable to substance use by province and territory, 2020



Note: Per-person costs for Quebec and Yukon could not be calculated.



# Findings, with a focus on alcohol



# Setting the stage for CSUCH findings: The magnitude of Canada's alcohol supply

In Canada, in 2022:

- Alcohol users: 24,500,000 (63%)
- Alcohol nonusers: 14,300,000 (37%)

StatsCan: 8.10 litres ethanol per person 15+



Total magnitude of the alcohol drug supply:

**16,943,733,183 Canadian standard drinks (CSD) per year**



# Setting the stage for CSUCH findings: The magnitude of Canada's alcohol supply

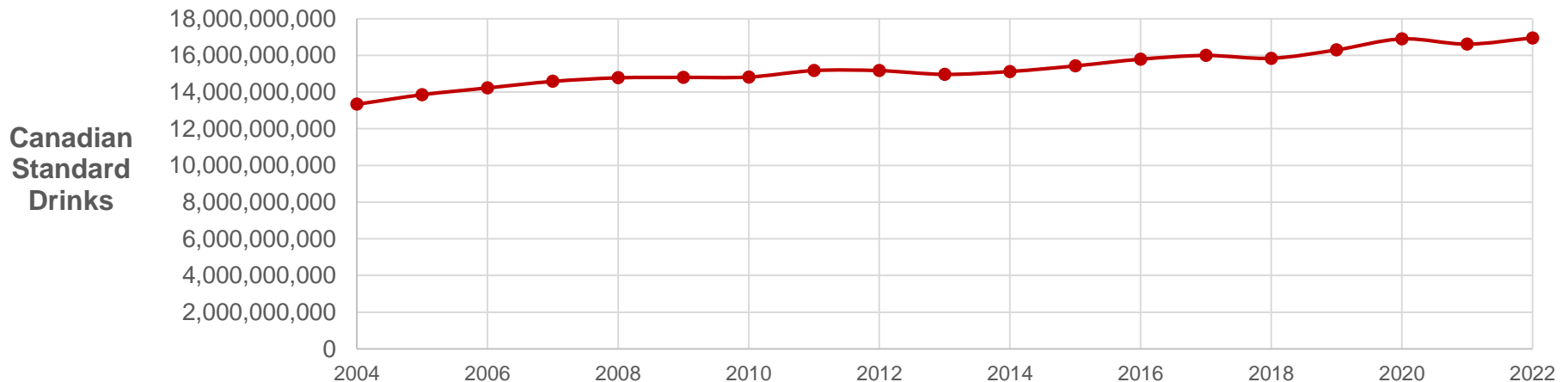
Total magnitude of the alcohol supply:

**17,000,000,000 CSD per year / 24,500,000 alcohol users**

694 Canadian standard drinks (CSDs) per alcohol user

= 13.3 CSD per alcohol user per week

Canada's Ethanol Supply, Total Magnitude



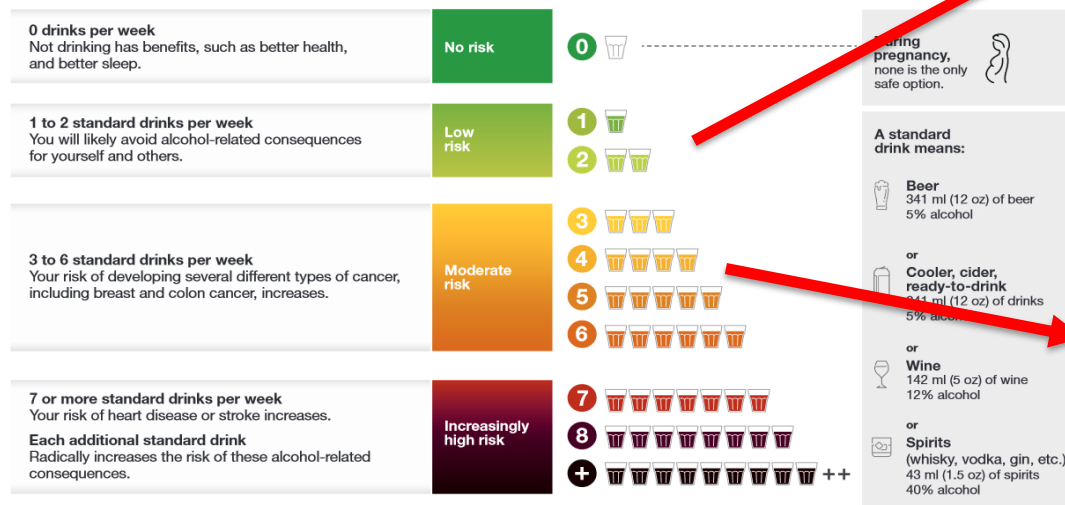


# Setting the stage for CSUCH findings: The magnitude of Canada's alcohol supply

694 Canadian standard drinks (CSDs) per alcohol user  
= 13.3 CSD per alcohol user per week

## Alcohol consumption per week

Drinking alcohol has negative consequences. The more alcohol you drink per week, the more the consequences add up.



For population to reach top of low-risk use zone (2 SD/wk):

- 85% reduction in the magnitude of supply

For population to reach top of moderate-risk (6 CSD/wk):

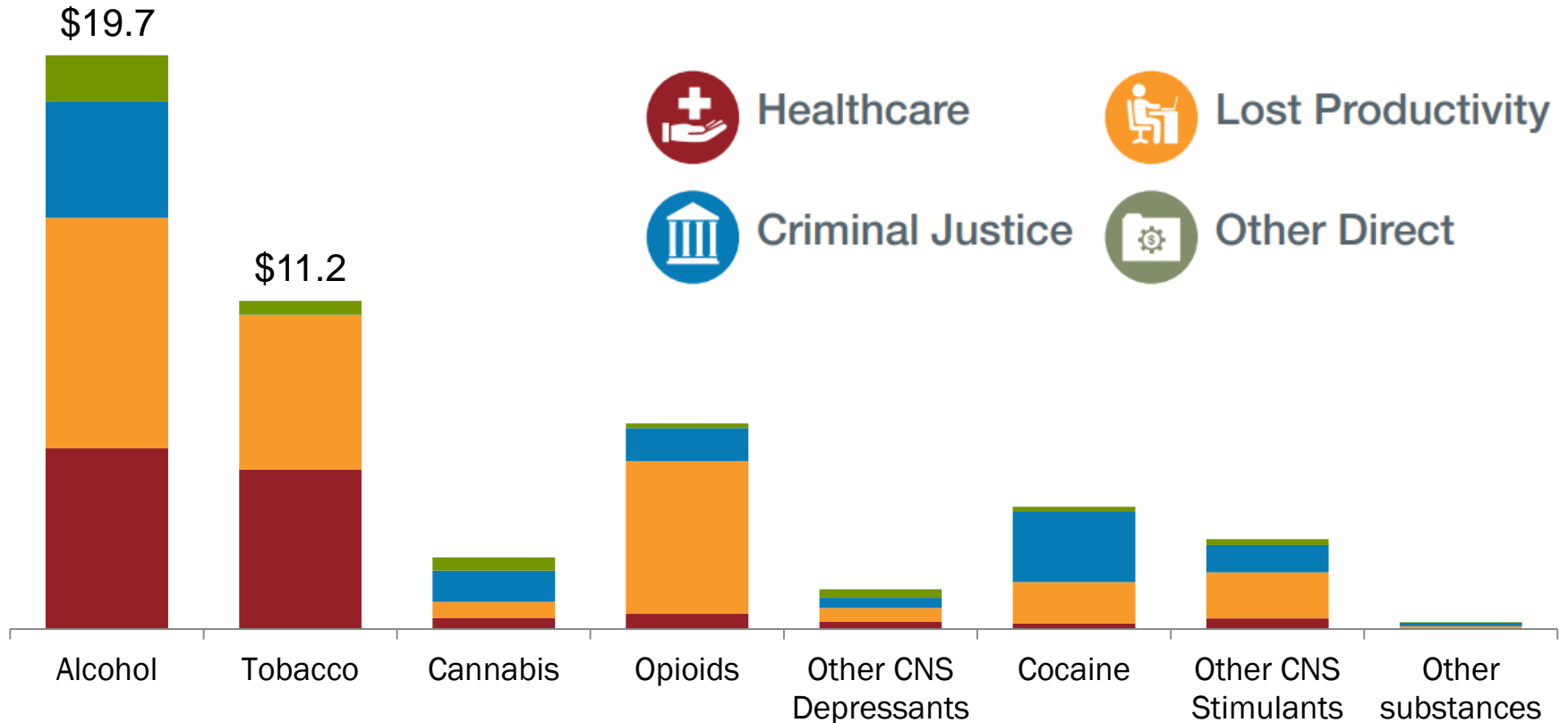
- 57% reduction in the magnitude of supply

# Alcohol and tobacco account for most costs



63%

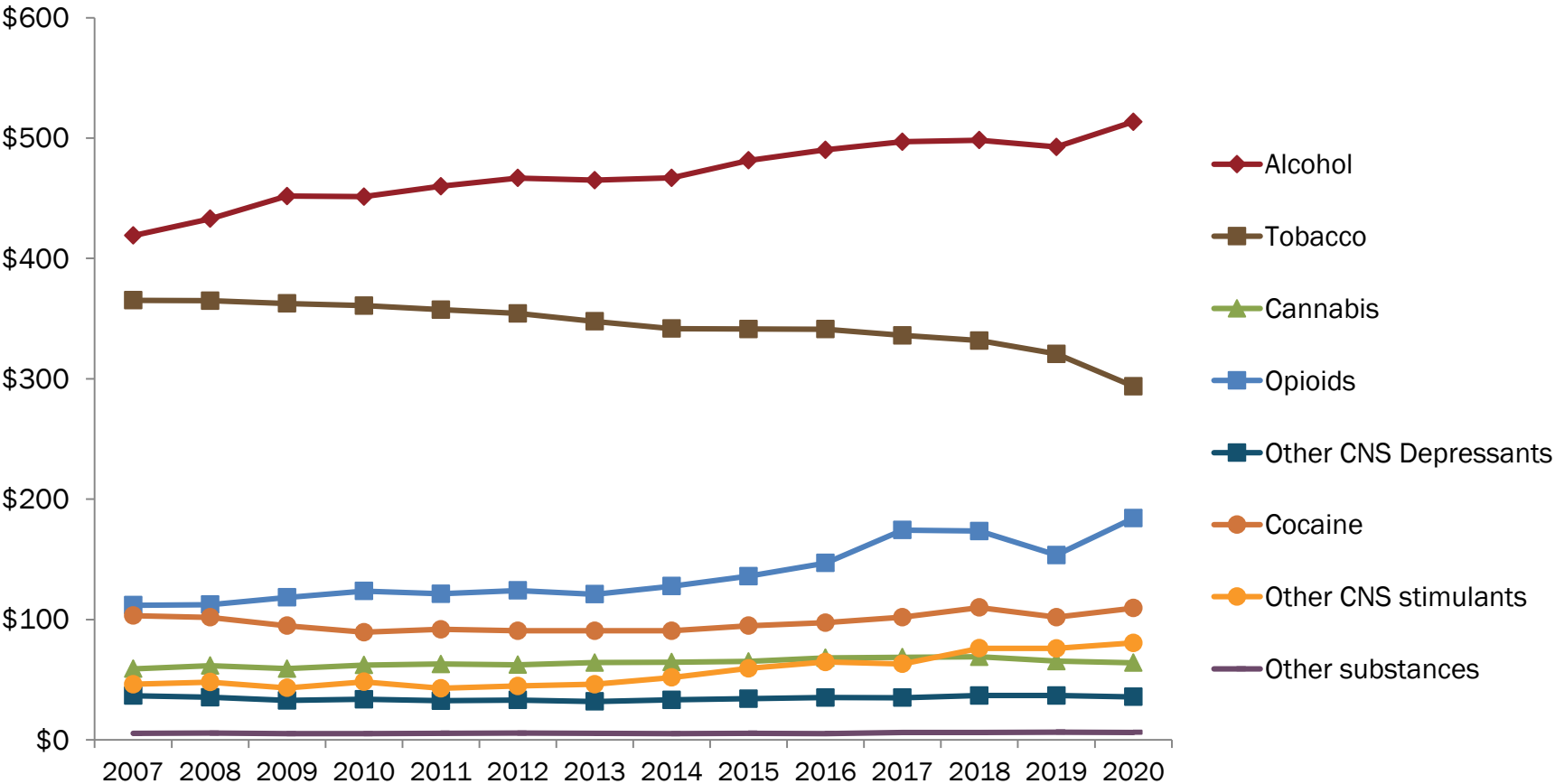
Cost of substance use in Canada in billions, 2020





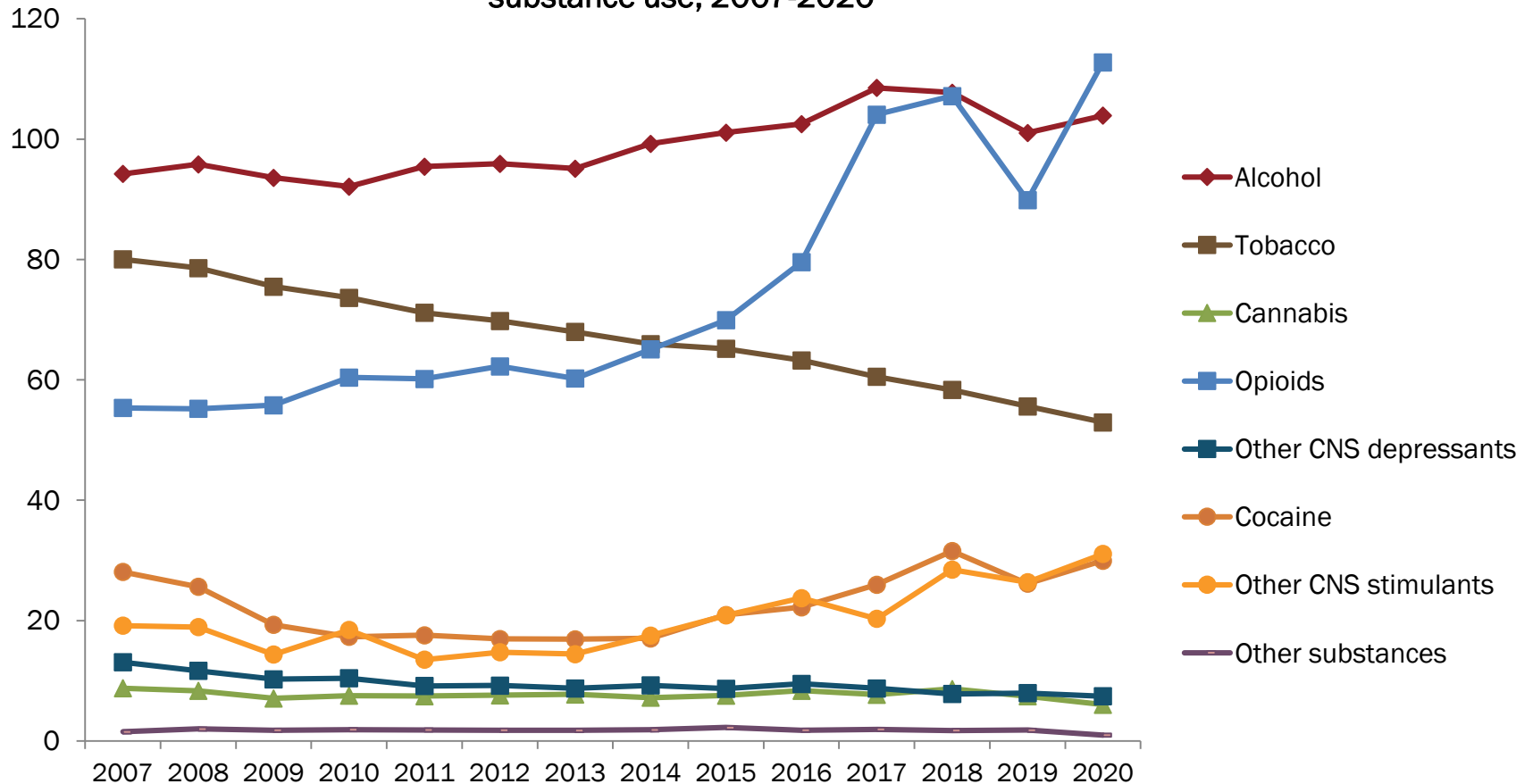
# Costs of alcohol use have grown, while costs of tobacco use have decreased

Per-person costs attributable to substance use in Canada by substance, 2007-2020



# Opioids, alcohol are responsible for most productive years of life lost

Number of potential years of productive life lost (in thousands) attributable to substance use, 2007-2020

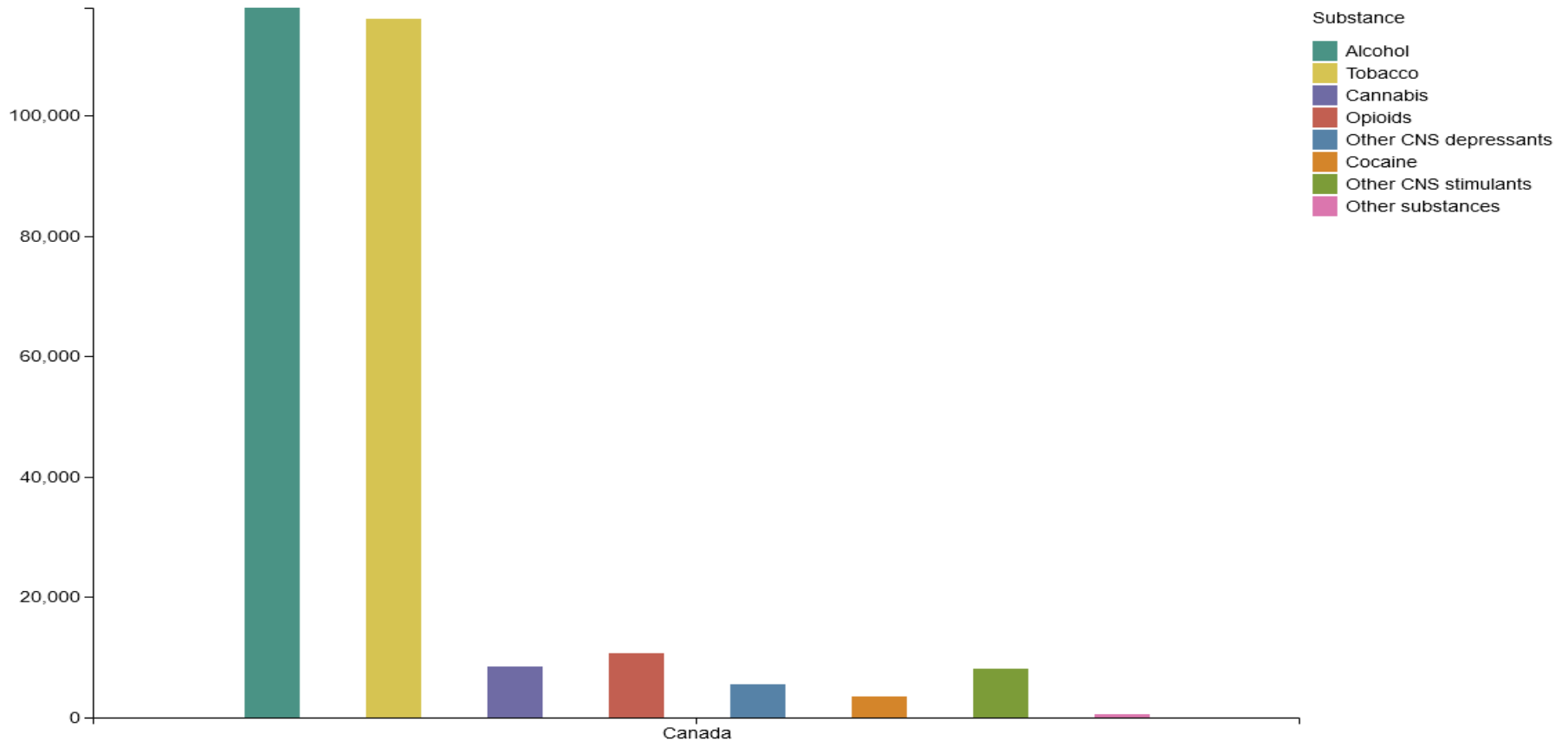


Note: Excludes deaths in Yukon Territory (year 2017 to 2020 only).

# Alcohol is responsible for the most hospital stays

- Alcohol caused 117,871 inpatient stays at a cost of \$1.63BB
- Tobacco caused 116,027 stays at a cost of \$1.37BB

Substance use-attributable inpatient hospitalizations counts, 2020

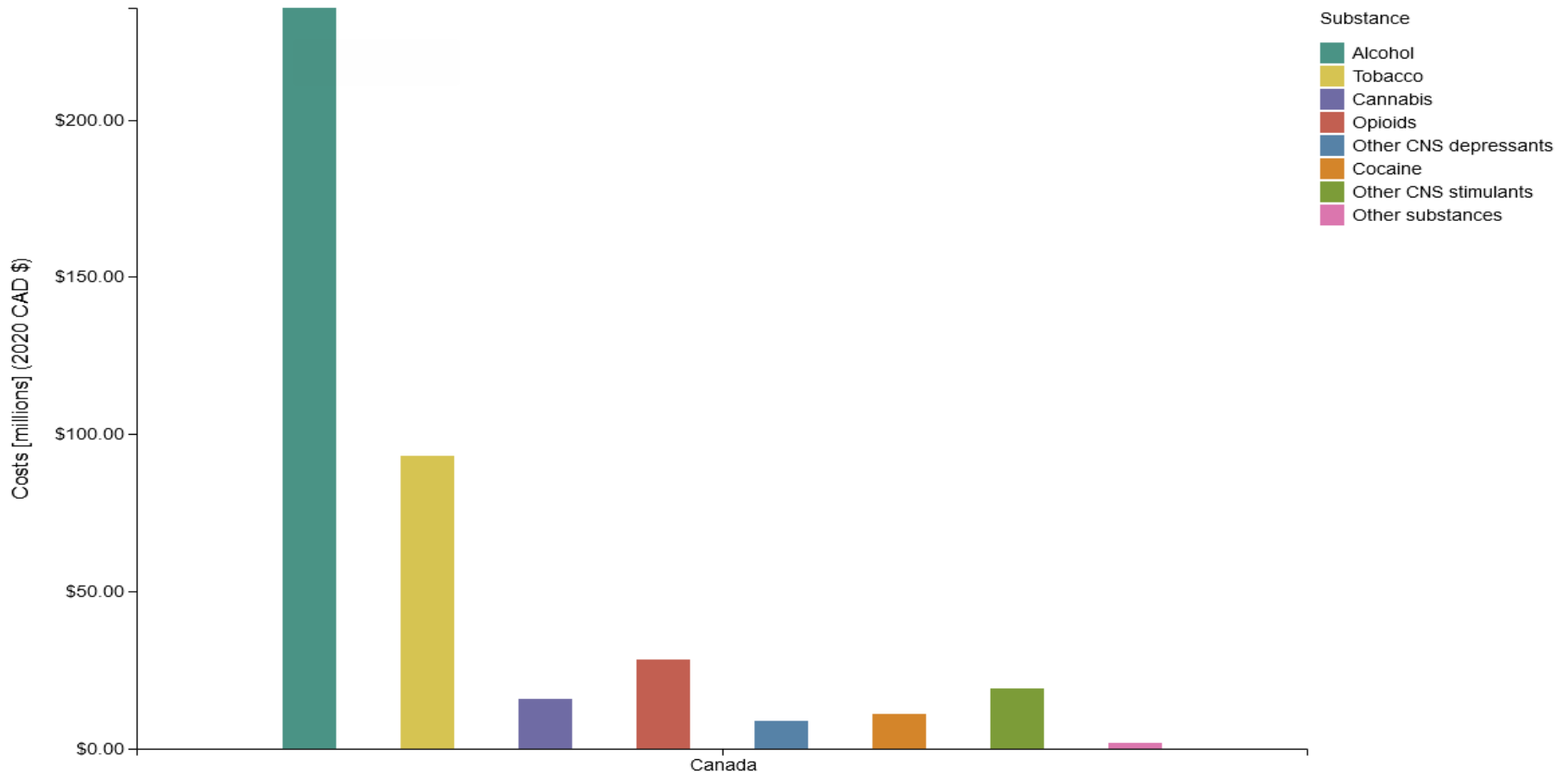




# Alcohol is responsible for the most ED visits

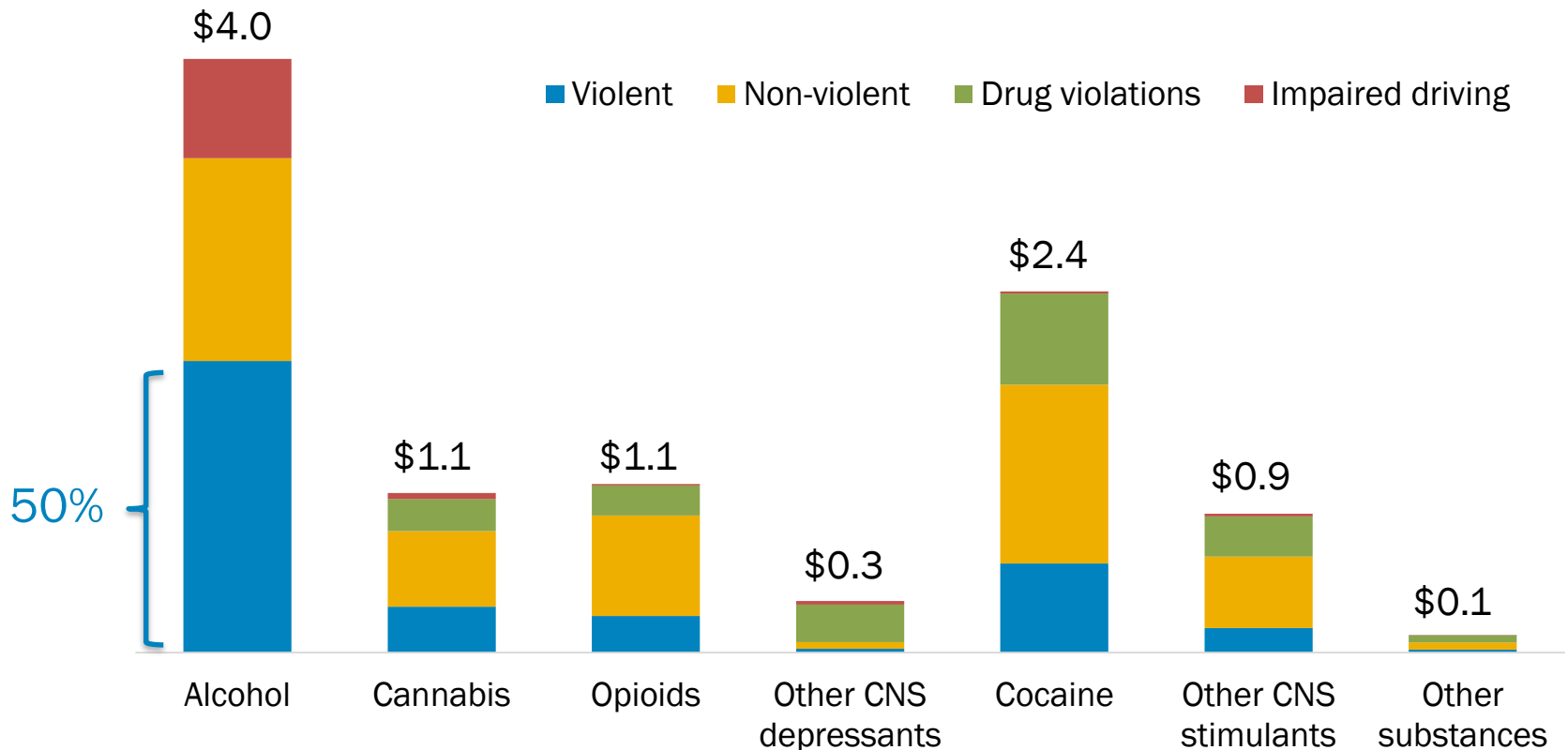
- Alcohol caused 652,000 ED visits at a cost of \$235.5MM

Substance use-attributable emergency department visits costs, 2020



# Alcohol accounted for the greatest criminal justice costs

Criminal justice costs (in billions) attributable to substance use in Canada by substance and offence category, 2020



# Which categories drive alcohol-caused costs?

Alcohol	
<b>Healthcare costs</b>	<b>6,267.8</b>
Inpatient hospitalizations	1,628.4
Day surgeries	68.1
Emergency department visits	235.5
Paramedic services	128.8
Specialized treatment for SU	454.5
Physician time	1,935.3
Prescription drugs	1,817.2
<b>Lost productivity costs</b>	<b>7,868.9</b>
Premature death	4,641.1
Long-term disability	1,490.6
Short-term disability (absenteeism and presenteeism)	1,737.2
<b>Criminal justice costs</b>	<b>3,969.0</b>
Policing	2,180.4
Courts	763.6
Correctional services	1,025.0
<b>Other direct costs</b>	<b>1,565.4</b>
Research and prevention	16.5
Fire damage	681.7
Motor vehicle damage	424.1
Workplace drug testing	10.4
Employee assistance programs	46.1
Workers' compensation administrative costs	66.1
Social assistance	320.4
<b>Total</b>	<b>19,671.1</b>

Rank	Section	Chapter	Cost (millions)	Percent of total alcohol cost
1	Lost productivity	Premature deaths	\$4,641	23.6%
2	Criminal justice	Policing costs	\$2,180	11.1%
3	Healthcare	Physicians	\$1,935	9.8%
4	Healthcare	Prescription drugs	\$1,817	9.2%
5	Lost productivity	Short-term disability	\$1,737	8.8%



# Summary and Policy Considerations



# Key Messages

- In 2020, substance use cost \$49 billion and led to the loss of over 200 lives each day.
- Alcohol and tobacco, two legal substances, account for the most costs and harms in Canada
- Clear divergence in alcohol and tobacco harms are likely due, at least partially, to the differing policy and regulatory treatment of these two substances

# Policy Considerations

- Reduce harms of alcohol use by applying lessons learned from Canada's public health response to tobacco.
  - E.g. alcohol labelling, Canada's Guidance on Alcohol and Health
- Consider implementing a coordinated, step-wise, policy strategy towards reducing the magnitude of Canada's alcohol supply while supporting dependent users
  - Staged, coordinated deployment of a suite of evidence-based alcohol policies, such as: health and warning labelling & education programs, harm reduction services, availability & advertising restrictions and minimum unit pricing

# Next Steps

- Released CSUCH 2007-2020 in March 2023
- Medium to long term, continue to update with new years of data, new cost types, enhanced methods

