



# Prevalence of Driving Distractions among High School Student Drivers in Three Canadian Cities

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# Introduction

- According to the WHO *Global status report on road safety*:
  - Road traffic injuries are the leading cause of death among young people, aged 15 to 44
  - An estimated 1.3 million people die each year and some 20 to 50 million sustain non-fatal injuries
- In Canada
  - Motor vehicle crashes are a leading cause of injury for Canadian youth ages 15 to 19
  - MVC's represent some 70% of unintentional injury deaths and 23% of unintentional injury hospitalizations



<http://www.phac-aspc.gc.ca/publicat/lcd-pcd97/index-eng.php>  
 accessed: Sept 17, 2010)

# Introduction

Graduated Drivers' Licensing (GDL) has been introduced in several Canadian Provinces

- 2 stages: *Learner* and *Novice* - 12 mo. each stage
- DRIVING RESTRICTIONS AND CONDITIONS (BC):
  - Zero BAC level while driving
  - No driving between midnight and 5 a.m.
  - Limit of 1 passenger, unless supervisor who is 25 years or older
  - Refrain from driving highways or expressways
  - Mandatory display of 'L' or 'N' sign/plate when driving
  - Other restrictions (e.g. Not permitted to use cell phones)



## Purpose of the Study

To assess the prevalence of compliance with GDL rules and driving distractions among high school students in three Canadian cities (Halifax NS, Barrie ON & Vancouver BC) representing different geographic, socioeconomic, and jurisdictional settings

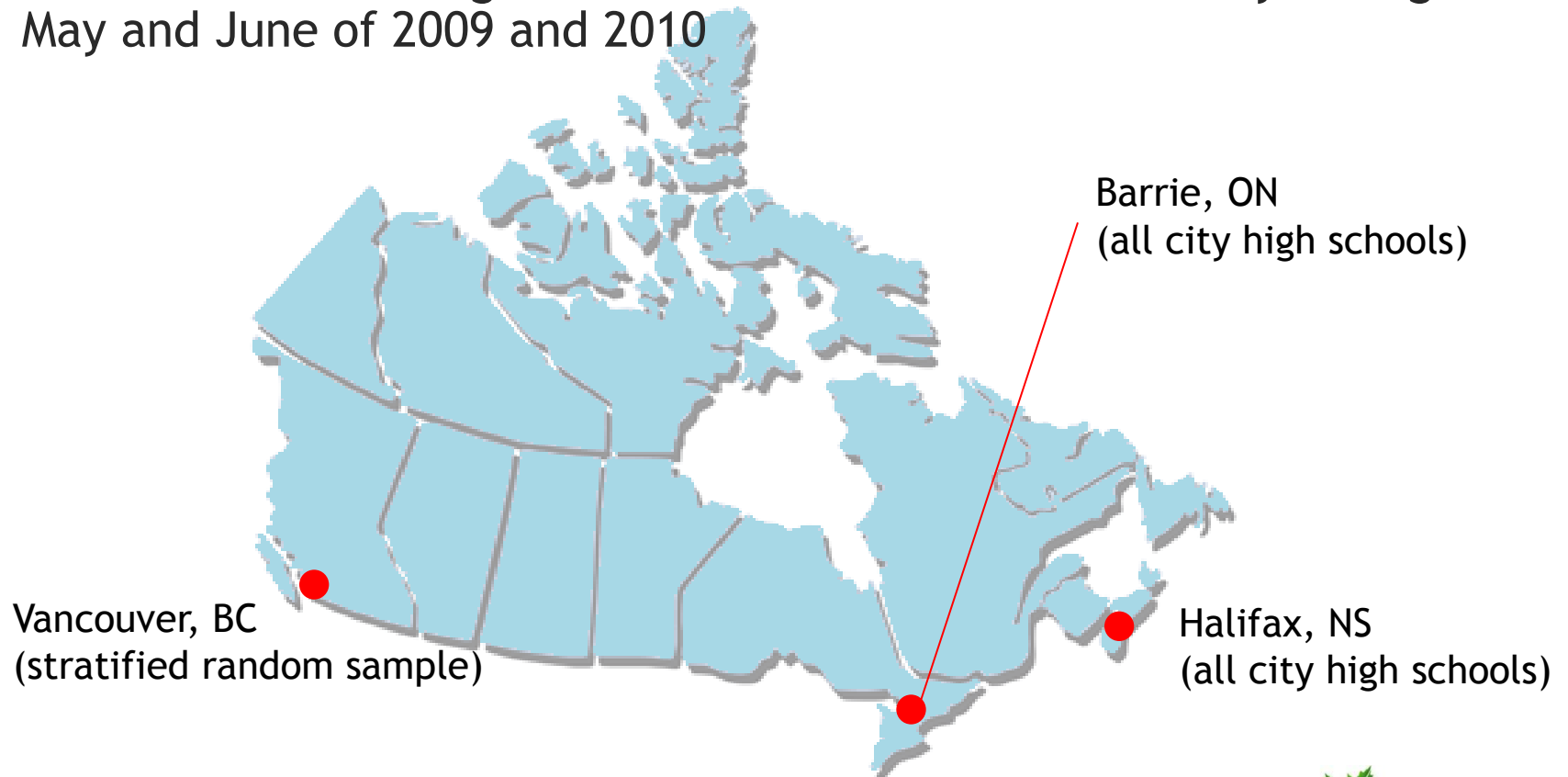


# Methods

- High schools in each city were identified using two sources:
  - School board websites
  - DMTI, a company which partners with universities to disseminate spatial data
- Schools were classified into income terciles based on the after-tax income of their neighbourhood census tract, according to 2006 census
- All high schools in Barrie and Halifax were included
- In Vancouver, a random selection, stratified by income level, was used

## Methods

- 30-minute observations were made by trained observers of high school drivers leaving school at the end of the school day during May and June of 2009 and 2010



## Methods

- Driver:
  - Sex
  - Seatbelt use
  - Passengers
  - Distractions:
    - cell phone
    - loud music
    - eating/drinking
    - smoking



# Results

Table 1: Number of schools and drivers observed (2009 and 2010)

Income	Barrie		Halifax		Vancouver		TOTAL	
	School	Drivers	School	Drivers	School	Drivers	School	Drivers
Highest	2	129	4	199	7	118	13	446
Mid	2	103	4	190	6	129	12	422
Lowest	2	60	4	151	8	204	14	415
<b>TOTAL</b>	<b>6</b>	<b>292</b>	<b>13</b>	<b>540</b>	<b>21</b>	<b>451</b>	<b>40</b>	<b>1,283</b>

Overall, males - 756 (58.9%)  
 females - 515 (40.1%)  
 unknown - 12 (1.0%)



# Results - Seat Belt Use

Table 2: Number of drivers wearing a seatbelt (2009 and 2010)

	Barrie		Halifax		Vancouver		TOTAL	
Income	n	%	n	%	n	%	n	%
Highest	127	98.4	195	98.0	116	98.3	438	98.2
Mid	99	96.1	158	83.2	125	96.9	382	90.5
Lowest	58	96.7	135	88.7	201	98.5	394	94.8
<b>TOTAL</b>	<b>284</b>	<b>97.3</b>	<b>488</b>	<b>90.4</b>	<b>442</b>	<b>98.0</b>	<b>1,214</b>	<b>94.6</b>

Overall, males - 714 (94.5%)  
 females - 489 (95.0%)  
 unknown - 11 (0.5%)

# Results - Passengers

**Table 3a: Number of drivers with passengers (2009 and 2010)**

Drivers	Passengers	%
544	0	42.4
482	1	37.6
153	2	11.9
104	3 or more	8.1

**Table 3b: Proportion of drivers with passengers by city**

City	%	Mean # Passengers
Halifax	99.0	2.0
Barrie	98.6	2.3
Vancouver	47.7	0.6

# Results - Driver Distractions

Table 4: Number of drivers with at least one distraction (2009 and 2010)

Income	Barrie		Halifax		Vancouver		TOTAL	
	n	%	n	%	n	%	n	%
Highest	29	22.5	4	2.0	30	25.4	63	14.1
Mid	17	16.5	25	13.1	38	29.5	80	19.0
Lowest	3	5.0	16	10.6	48	23.5	67	16.3
<b>TOTAL</b>	<b>49</b>	<b>16.8</b>	<b>45</b>	<b>8.3</b>	<b>116</b>	<b>25.7</b>	<b>210</b>	<b>16.4</b>

- Effect of Sex:
  - Overall: males - 141 (18.6%) : females - 64 (12.4%)
- Varied by city:
  - Barrie: 22.5% : 13.7%
  - Halifax: 9.1% : 10.1%
  - Vancouver: 30.1% : 30.1%

## Results - Nature of the Distraction

- Overall, 210 drivers (16.4%) had at least one driving distraction
- Of these:
  - Most common distraction: Loud music - 114 drivers (54.3%)
  - Second most common: Cell phone - 94 drivers (44.8%)
  - Third most common: Smoking - 25 drivers (12.1%)
- Vancouver had the highest proportion of drivers with at least one driving distraction: 116 of 210 (55.2%)
- Vancouver had the highest proportion of drivers observed using a cell phone while driving: 72 of 94 drivers (76.6%)

# Results - Neighbourhood Income

**Table 5: Number of drivers with at least one distraction by Neighbourhood Income (2009 and 2010)**

Income	Barrie		Halifax		Vancouver		TOTAL	
	n	%	n	%	n	%	n	%
Highest	29	59.2	4	8.9	30	25.9	63	30.0
Mid	17	34.7	25	55.6	38	32.7	80	38.1
Lowest	3	6.1	16	33.3	48	41.4	67	31.4
<b>TOTAL</b>	<b>49</b>	<b>100.0</b>	<b>45</b>	<b>100.0</b>	<b>116</b>	<b>100.0</b>	<b>210</b>	<b>100.0</b>

- Effect of Neighbourhood Income:
  - Overall: mid > low > high
- Varied by city:
  - Barrie: high > mid > low
  - Halifax: mid > low > high
  - Vancouver: low > mid > high

# Limitations

- Poor visibility into the interior of the cars may have resulted in misclassification
- Observations captured students' behaviour at one moment in time
  - they may engage in more risky behaviour at other times of the day
- School's neighbourhood income a proxy for income
- Results may not be generalizable to young drivers who not attend school



# Conclusions

- Compliance with provincial GDL restrictions is relatively high:
  - Seat belt wearing rates in Barrie and Vancouver were 97% and 98%, respectively. However, Halifax rates were lower at 90%
  - Number of passengers were within restrictions and the fewer number in Vancouver may be explained by the stricter restriction in BC
- The presence of at least one distraction is approximately 1 in 6 drivers observed (16.4%)
  - Lower than self-report US youth data (Hedlund J, 2005) where 62% reported cell phone use and 33% failed to wear seatbelt

# Conclusions

- Variations in provincial GDL requirements may have an impact on the kinds of distractions observed in each city
  - e.g. cell phone use was highest in Vancouver where legislation restricting their use did not come into force until 2010
- Distractions were seen more frequently in male drivers and drivers living in Vancouver
- The effect of socioeconomic status varied between the cities, and this data needs to be further corroborated by other studies
- Additionally, further data is needed to assess young drivers risk behaviour at other times, particularly during night driving

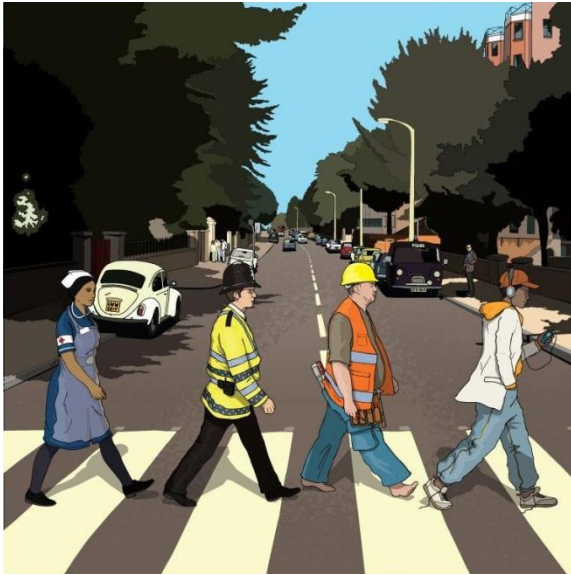


# BC INJURY research and prevention unit



## Thank you





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