

Niagara Road Safety Pre and Post Analysis
Think and Drive Campaign
Niagara Region Public Health
SHARE Unit

March 2009

Executive Summary

Think and Drive's Niagara region-wide road safety social marketing campaign targeted all drivers and road users who reside in all 12 municipalities in the Niagara region, with a focus on male drivers 16-44. The short-term goals of the campaign were to: to increase awareness among Niagara drivers about Niagara's crash problem; to increase knowledge among Niagara drivers about road safety skills applicable to the Niagara crash problem; to change driver attitudes such that drivers take personal responsibility for road safety; and to change driver behaviour in order to decrease motor vehicle collisions.

Evaluation Highlights

All drivers

- Niagara drivers' increased their perception that Niagara region has serious road safety issues over the course of the campaign.
- Older adult drivers (45+) were significantly more likely to indicate Niagara has serious road safety issues than young adult drivers (18-24).
- The top 3 actions identified by drivers that lead to serious collisions included: speeding, drinking and driving, and aggressive driving.
- Rural roads and cell phone use while driving were factors that increasingly gained recognition by drivers over the course of the campaign.
- Two main priorities for Niagara authorities to take action were acknowledged by Niagara drivers: more traffic enforcement and road safety education.
- Young adult drivers (18-24) were more likely to report changes to the roads as a means for authority to take action on compared to older adults 45 year and up.
- Males thought road safety education was the priority for Niagara to reduce serious or fatal collisions, while females thought more traffic enforcement was the priority.
- To reduce serious car crashes, Niagara drivers reported they need to pay more attention while driving, slow down and avoid distractions while driving as behaviours they could personally change.
- Overall, 32.2% of Niagara drivers were aware of Niagara's Think and Drive road safety campaign.
- Phase 2 (July to September 2008) to phase 3 (October to December 2008) had a significant increase in overall recognition of the campaign among all drivers.
- Senior drivers (65+) were less likely to recognize the Think and Drive campaign than adult drivers (18-44).
- In total, 11.3% of Niagara drivers had heard of the Think and Drive website.

Male drivers 18-44

- Awareness of road safety issues in Niagara among this group remained relatively stable over the course of the campaign.
- Three main factors that lead to serious car crashes in Niagara were identified: drinking and driving, speeding, and aggressive driving. Similar to all drivers' responses, yet in a different order of importance.
- Road safety education was identified as the top priority for authority action to potentially reduce serious car crashes.
- To reduce serious car crashes, speed reduction and paying more attention to the roads while driving were the top personal behaviour changes identified.
- Among those who ever had heard or seen any road safety campaigns in the past year, 33.8% had heard or seen the Think and Drive campaign.

Methodology

Evaluation Overview:

This evaluation report provides a summary of two questionnaires developed for inclusion in the Rapid Risk Factor Surveillance System (RRFSS). Both questionnaires were Niagara region specific for the purpose of evaluating the effectiveness of the Think and Drive campaign.

- Questionnaire I - was implemented from February, 2007 until December, 2008 to examine baseline data prior to the launch of the campaign, and during the five key phases of the Think and Drive campaign. The main purpose of this questionnaire was to estimate public awareness of road safety issues; to determine public knowledge of factors related to serious car crashes; to identify driver priorities for authority action that could reduce serious car crashes; and to measure attitudes indicating personal responsibility for road safety. Phases were broken down as: Baseline (Feb-Sept 2007); Phase 1 (Oct-Dec 2007); Phase 2 (Jan-Mar 2008); Phase 3 (Apr-Jun 2008); Phase 4 (July-Sept 2008); Phase 5 (Oct-Dec 2008). These phases align with the phases of the Think and Drive marketing and communication campaign consisting of a pre-campaign phase followed by five 3-month phases totalling a fifteen-month campaign. (See Appendix A)
- Questionnaire II - was implemented from March 2008 through December 2008. This questionnaire was developed to estimate public awareness of local road safety media campaigns and the Think and Drive campaign. Three key phases of the campaign were identified. Phases were broken down as: Phase 1 (Mar-June 2008); Phase 2 (July-Sept 2008); Phase 3 (Oct-Dec 2008). These phases align with the final three 3-month phases of the fifteen-month Think and Drive marketing and communication campaign. (See Appendix B)

Data Source:

RRFSS is an ongoing, monthly telephone survey used to monitor community trends in health-related knowledge, attitudes, and behaviour. Niagara Region Public Health, along with other health units across Ontario, opt into specific survey content on a monthly basis

to provide timely data relevant to local public health needs. Each month, approximately 100 Niagara residents 18 years and older are surveyed for just under 20 minutes. The RRFSS does not capture responses from those below the age of 18. The results from RRFSS are used to support program planning and evaluation, to improve community awareness on a multitude of health risk factors.

Data Analysis:

Think and Drive's Niagara region-wide road safety social marketing campaign targeted all drivers and road users who reside in all 12 municipalities in the Niagara region, with a focus on male drivers 16-44. Therefore, only respondents who indicated they had driven a vehicle in the past 12 months were included in the analysis. Data were analyzed over time and relationships with respondents' gender and age group were also considered. A specific focus on males 18-44 was investigated. Data were analyzed using SPSS 17.0 and were weighted to represent the number of individuals in the household to ensure the data collected represented the Niagara population. When comparisons between groups were made, 95% confidence intervals were calculated.

Sample Representativeness:

The data collected in 2007 and 2008 calendar years for the RRFSS questionnaires were fairly representative and similar in terms of the respondents sampled. Samples did not differ significantly by gender or age.

Table 1. Representativeness for 2007 and 2008 data

	2007	2008
Total N (weighted)	1055	1176
Male (%)	43.8	41.8
Female (%)	46.4	58.2
18-24 (%)	9.8	9.5
25-44 (%)	29.6	29.9
45-64 (%)	38.5	38.8
65+ (%)	22.2	21.8

Evaluation Results

Questionnaire I – Road Safety Awareness

Niagara Residents Awareness of Road Safety Issues

Over the course of the campaign, there was an overall increase in Niagara drivers' recognition that Niagara region has serious road safety issues. As shown in Figure 1, as time in the campaign progressed, drivers' perceptions that Niagara has a higher rate of serious car crashes than other regions also increased from baseline to phase 5. The largest significant difference can be seen between phase 1 of the campaign and phase 5 (23.4% (CI: 21.9-25.5) vs. 31.7% (CI: 29.7-33.7)).

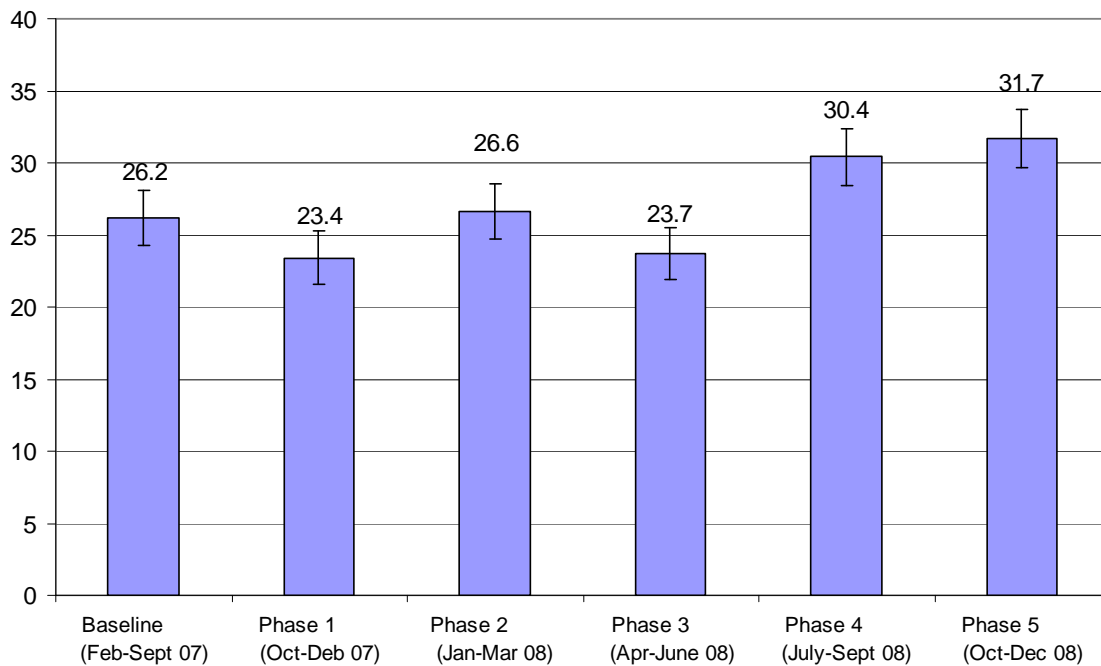


Figure 1. The % of Niagara drivers who think Niagara region has a higher rate of serious car crashes than other regions over the Think and Drive campaign.

Awareness of road safety issues in Niagara differed significantly by age group (See Figure 2). However, males and females had similar perceptions that Niagara had a higher rate of serious crashes than other regions across the province (males 28.4% (CI: 26.4-30.4) vs. females 25.3% (CI: 23.4-27.2)). As shown in Figure 3 among males 18-44, awareness of road issues remained relatively stable at approximately 20.0%. Of note, awareness was at its lowest in phase 3 among this specific group of males.

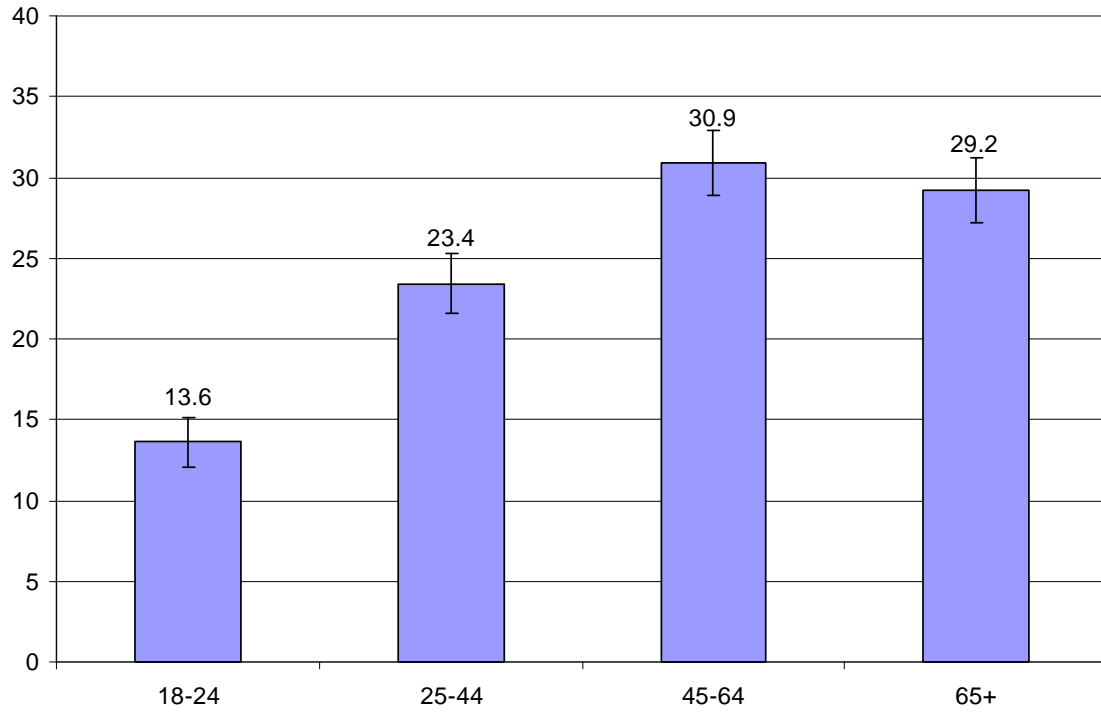


Figure 2. The % of Niagara drivers who think Niagara has a higher serious crash rate than other regions by age group

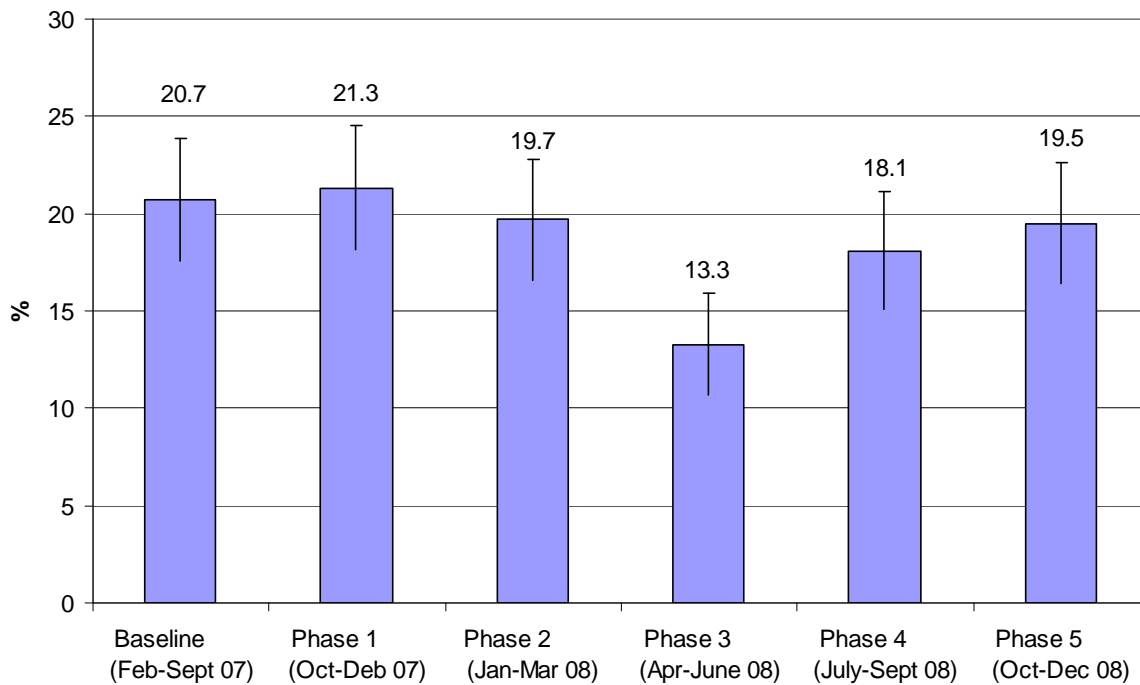


Figure 3. The % of Niagara Male drivers (18-44) who think Niagara has a higher serious crash rate than other regions over Think and Drive campaign.

According to Niagara drivers', the top three actions that lead to serious car crashes were speeding, drinking and driving, and aggressive driving. Approximately 88.4% (CI: 87.0-89.8) of respondents identified speeding as a major factor associated with car crashes. Additionally, 87.0% (CI: 85.5-88.58) perceived drinking and driving; and 81.9% (CI: 80.2-83.6) perceived aggressive driving to be the other major factors leading to serious car crashes in Niagara. Among males 18-44, the top three factors identified in order from highest to lowest were drinking and driving (85.1%, CI: 82.3-87.9); speeding (82.7%, CI: 79.8-85.6); and aggressive driving (77.0, CI: 73.7-80.3). Interestingly, the top 3 factors were the same identified by all drivers 18 and up, yet, had a different order of importance.

According to Figure 4, the same top 3 factors were also identified by males and females similarly. Of interest, females had a higher proportion of responses for factors such as speeding, drinking and driving, and cell phone use. Age differences and opinions of factors that lead to serious crashes are presented in Figure 5.

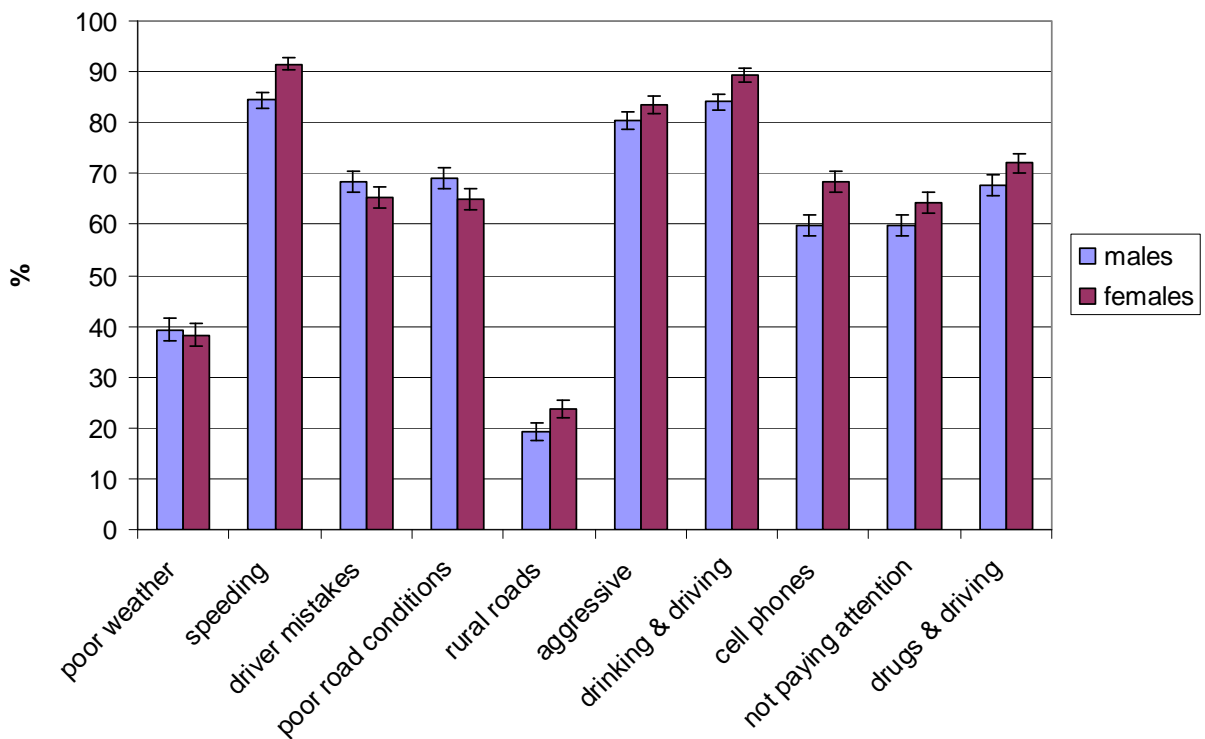


Figure 4. Perceived factors that lead to serious car crashes among males and females.

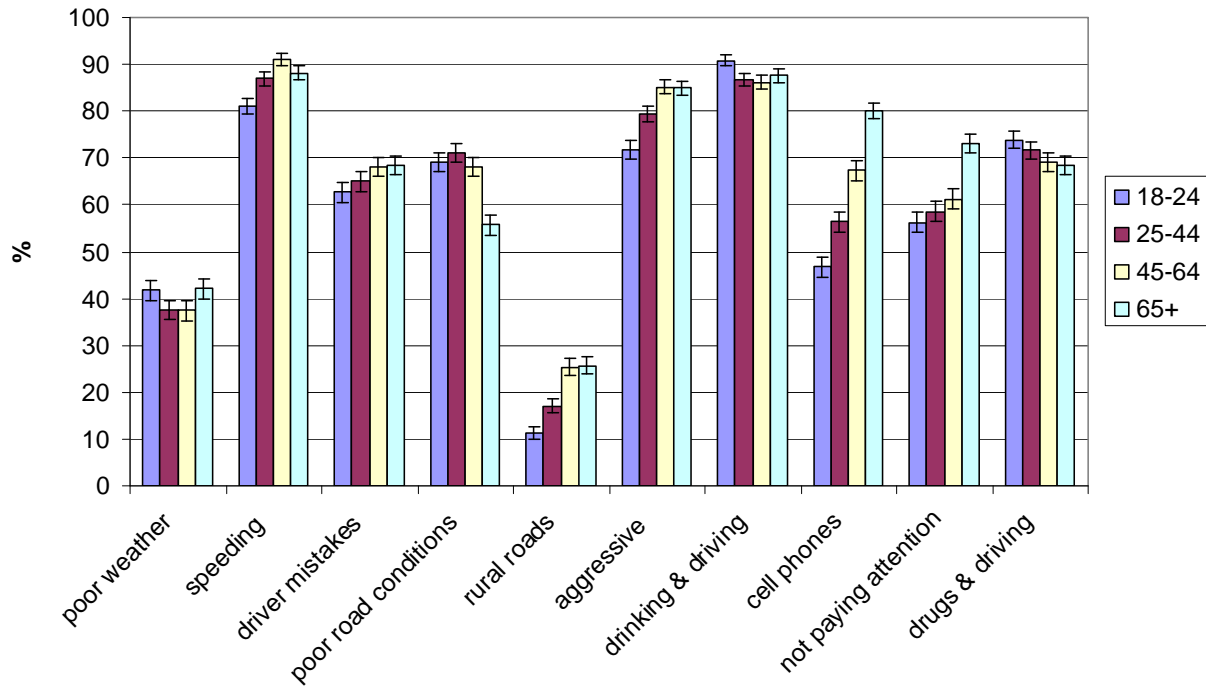


Figure 5. . Perceived factors that lead to serious car crashes by driver age group.

Niagara drivers' perceptions of factors that lead to serious crashes in Niagara over the course of the Think and Drive campaign are presented in Figures 6 through 9. Drinking and driving, speeding and aggression as leading factors stayed relatively stable over the course of the campaign, , whereas others were recognized as being a major contributor to car crashes over time, such as rural roads and cell phone use while driving.

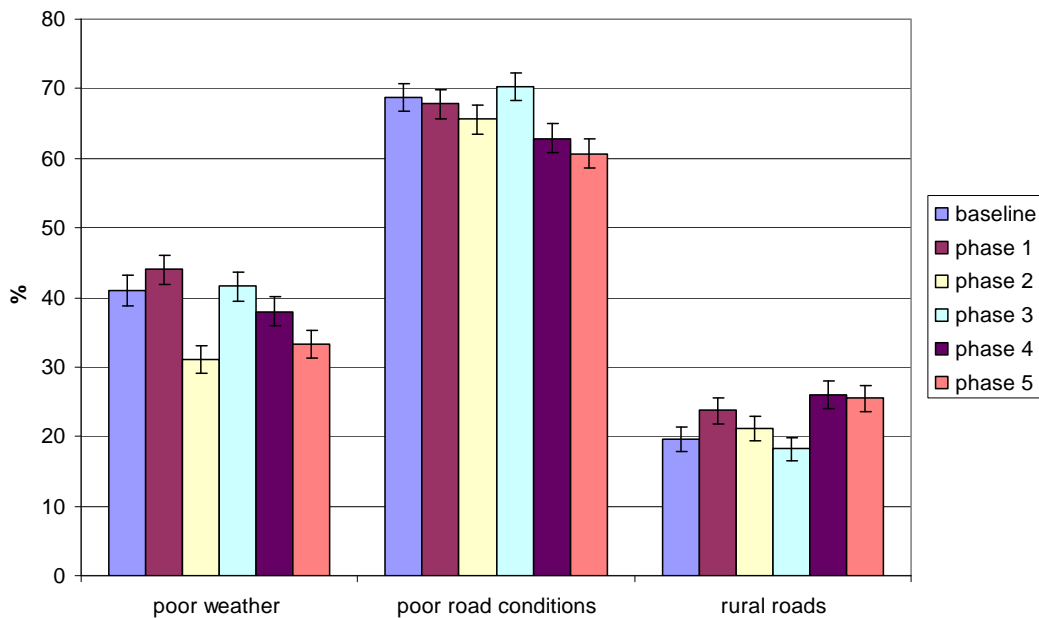


Figure 6. Perceived factors that lead to serious car crashes in Niagara: Poor weather, poor road conditions, and rural roads from Baseline to Phase 5.

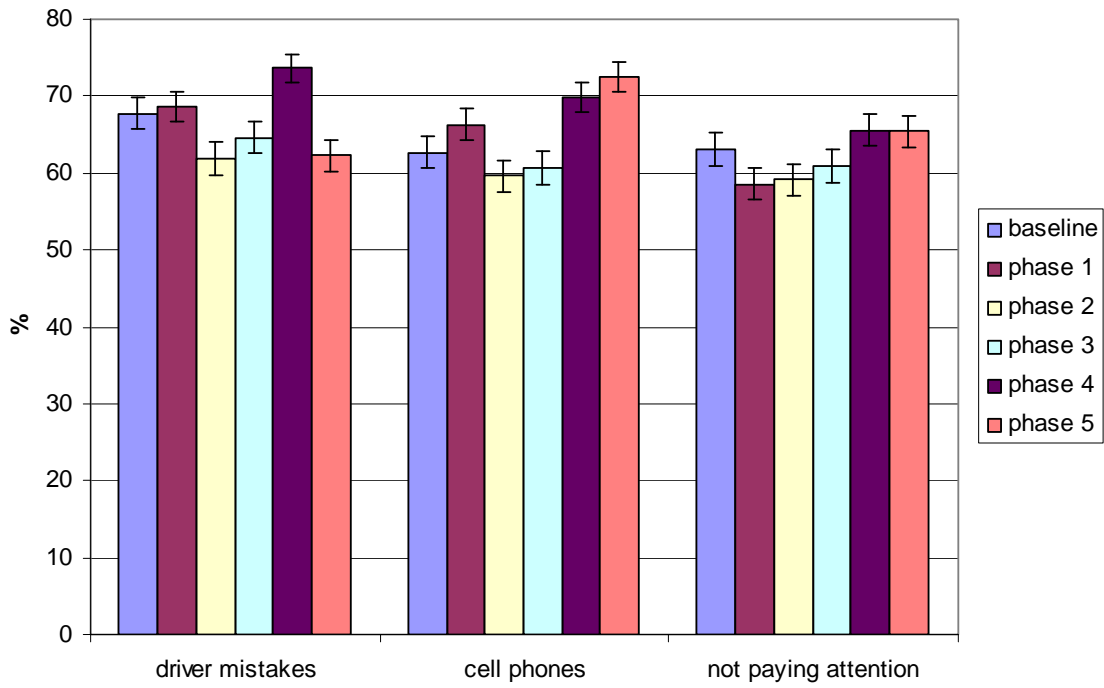


Figure 7. Perceived factors that lead to serious car crashes in Niagara: Driver inattention factors from Baseline to Phase 5.

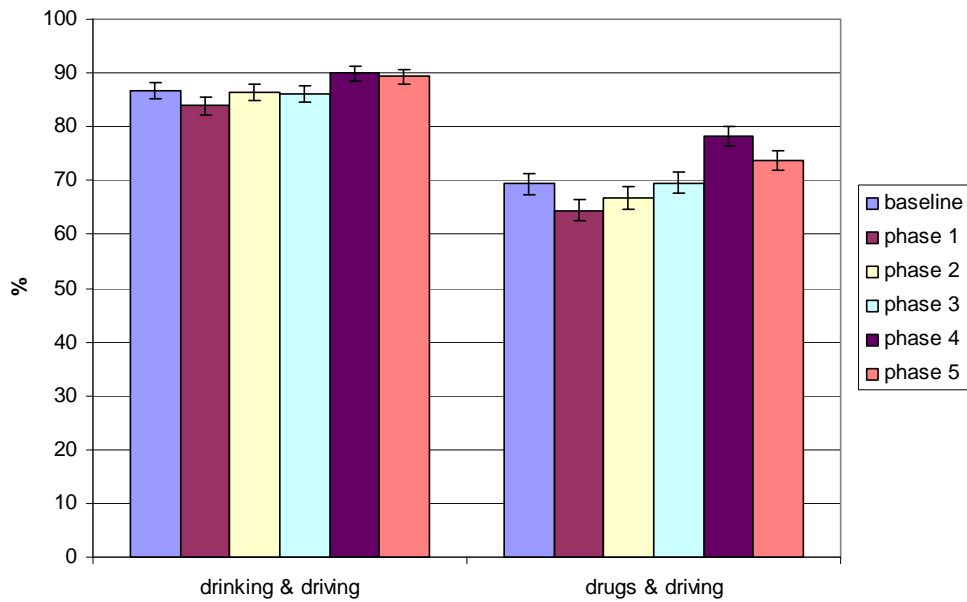


Figure 8. Perceived factors that lead to serious car crashes in Niagara: Driver impairment from Baseline to Phase 5.

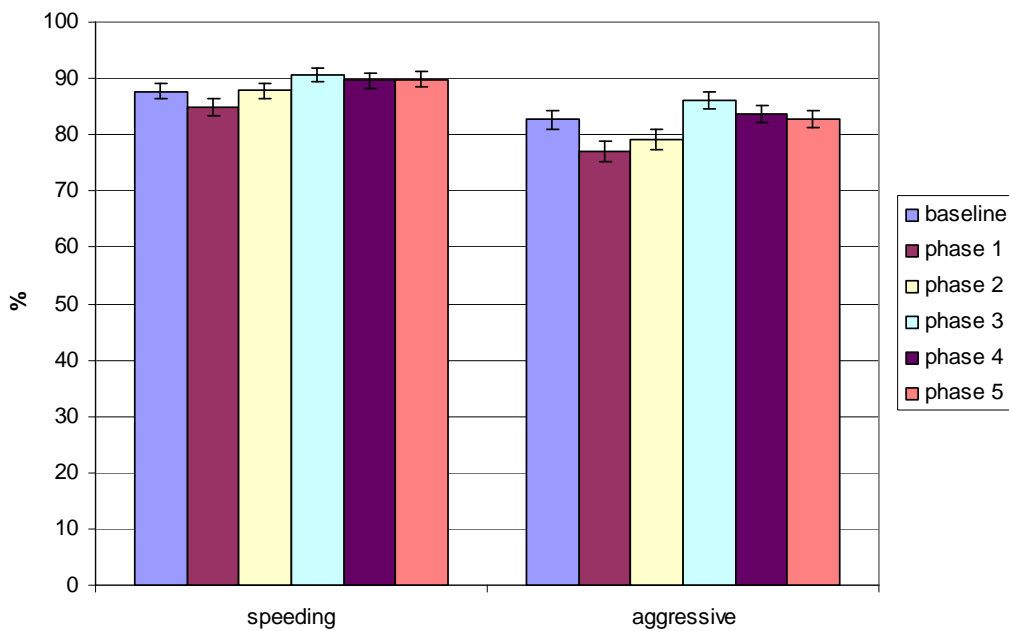


Figure 9. Perceived factors that lead to serious car crashes in Niagara: Speed and aggression from Baseline to Phase 5.

Niagara Drivers’ identified priorities for authority action that could reduce serious car crashes

The majority of drivers identified 2 main priorities for Niagara authorities to reduce serious car crashes. More traffic enforcement (39.8%, CI: 37.7-41.9) and road safety education (34.9%, CI: 32.8-37.0) were the top priorities identified to reduce serious car crashes. Few drivers identified traffic laws, changes to the roads, changes to car design, and unsure of changes as strategies to reduce car crashes (see Appendix A for other response options). Among males 18-44, more road safety education (41.1%, CI: 37.3-44.9) was the top priority identified among this particular group.

Presented in Figure 10 is the distribution of drivers’ responses of what authorities could do to reduce serious car crashes over the course of the Think and Drive campaign.

Responses such as changes to the roads and changes to traffic laws remained relatively stable over the course of the campaign. Responses for more traffic enforcement and road safety education fluctuated from baseline to phase 5.

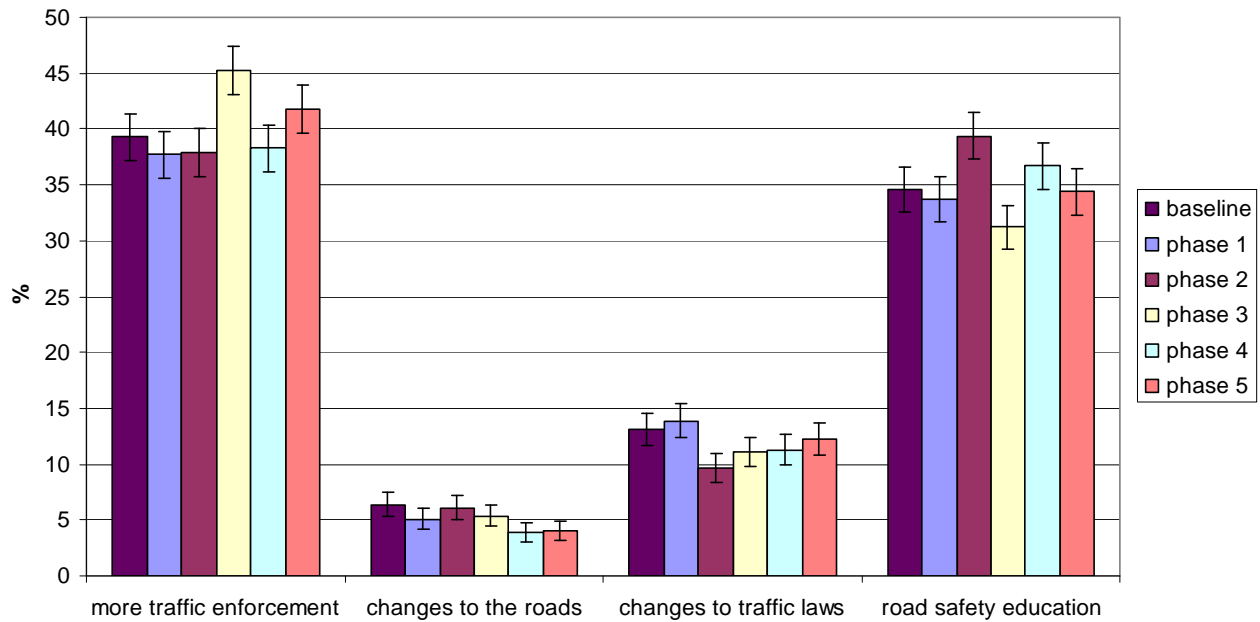


Figure 10. Niagara drivers' priorities for authority action to reduce serious car crashes over the Think and Drive campaign.

Observable differences between age groups were recognized in terms of their responses to what authorities could do to reduce serious car crashes. According to Figure 11, the 18-24 year old age group identified considerably different priorities for Niagara compared with that of the 65+ group. Younger drivers were much more likely to report changes to the roads as a means of change compared to seniors (11.4% (CI: 10.0-12.8) vs. 3.0% (CI: 2.3-3.7)), whereas seniors were more likely to identify more road safety education as a means for reducing serious car crashes (38.1% (CI: 36.0-40.2) vs. 27.0% (CI: 25.1-28.9)). Also interesting was the fact that males compared with females were more likely to state that road safety education would be effective (38.9% (CI: 36.8-41.0) vs. 31.6% (CI: 29.6-33.6)) while females identified more traffic enforcement (42.4% (CI: 40.3-44.5) vs. 36.7% (CI: 34.6-38.8)) (See Figure 12).

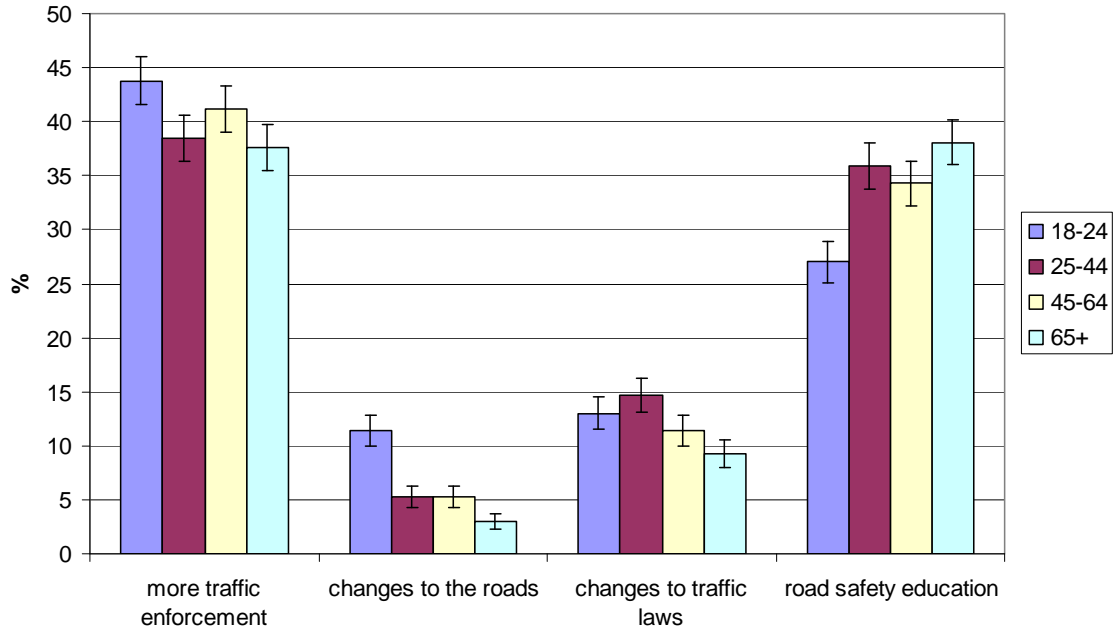


Figure 11. Niagara drivers' priorities for authority action to reduce serious car crashes by age group.

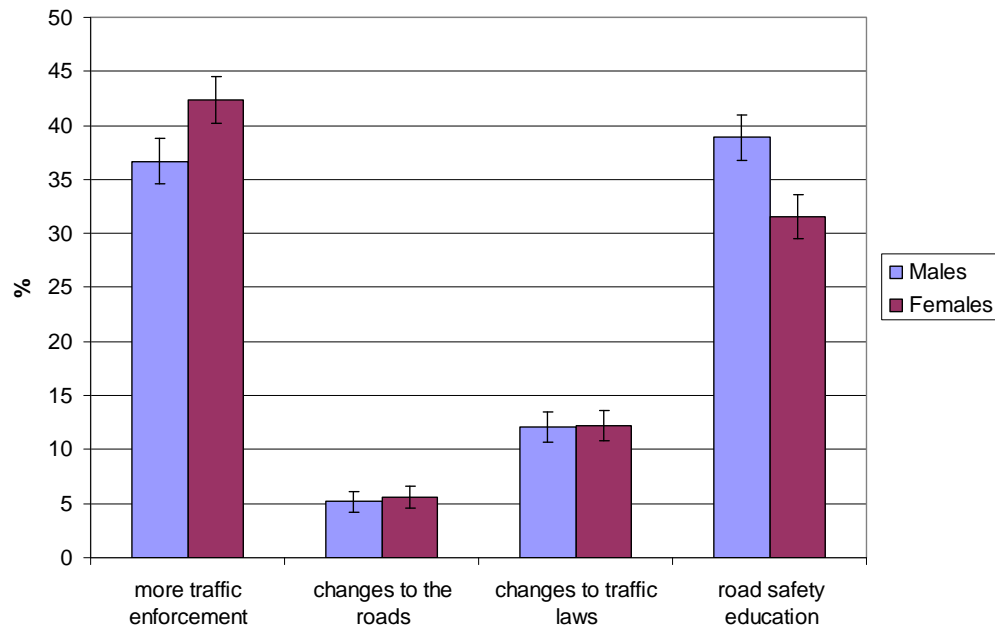


Figure 12. Niagara drivers' priorities for authority action to reduce serious car crashes by gender.

Niagara drivers' personal responsibility towards road safety

When Niagara drivers were asked what they could personally do about their driving to reduce their chances of being in serious car crash, the top 3 choices were: pay more attention while driving (28.4% (CI: 25.0-31.8)), slow down (21.6% (CI: 18.5-24.7)), and avoid distractions while driving (15.5% (CI: 12.8-18.2)). The remainder of choices that drivers identified as behaviours they could personally change had very low response rates and therefore were not reported. Among males 18-44, slow down and pay more attention to the roads were identified as the top personal behaviour change reported to reduce their risk of serious crashes (26.1%; (CI: 22.7 -29.5) vs. 23.5%; (CI: 20.2-26.8)).

As shown in Figure 13, drivers' personal opinion to slow down while driving decreased from baseline to phase 5 (22.3% (CI: 19.2 -25.4) vs. 16.8% (14.0-19.6)). Yet, avoiding distractions did not change much over time; baseline (14.8% (CI: 12.1-17.5) to phase 5 (17.5% (CI: 14.6-20.4)). Interestingly, paying more attention to the roads did increase from baseline to phase 5 but not significantly; baseline (29.0%, CI: 25.6-32.4) to phase 5 (34.7%, CI: 31.1-38.3).

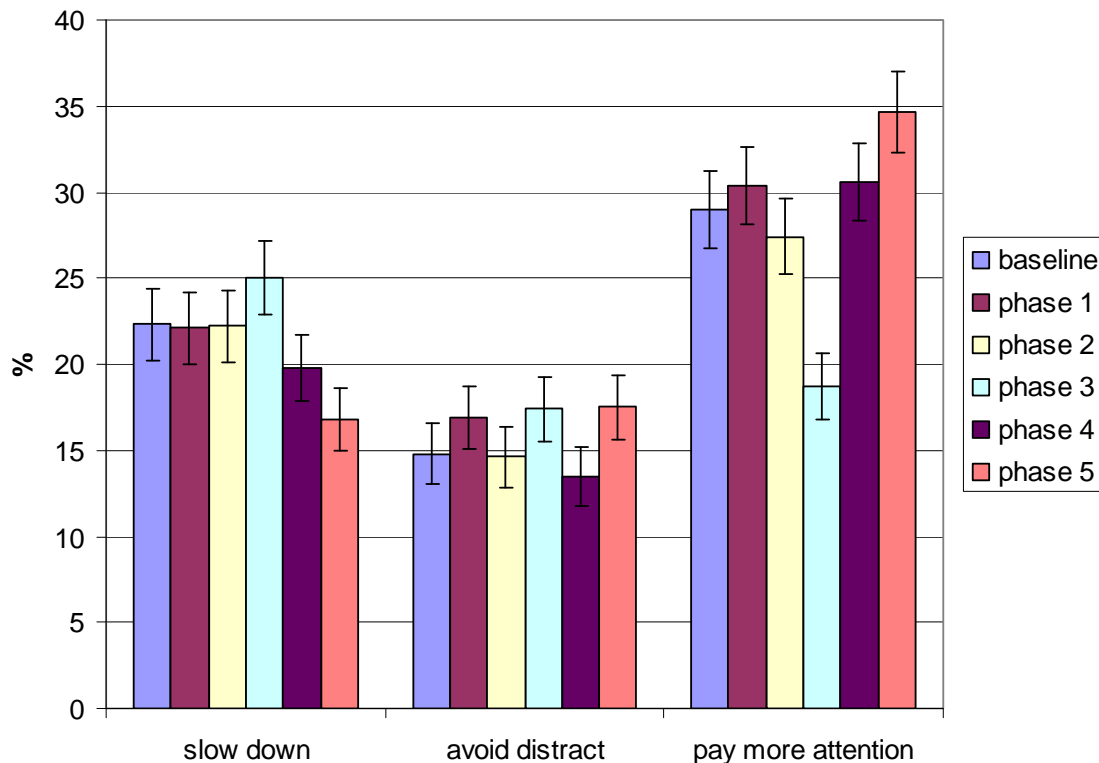


Figure 13. Niagara drivers' personal opinions about what they could do to reduce serious car crashes over the Think and Drive campaign.

Questionnaire II – Think and Drive Campaign Awareness

Niagara Drivers' Awareness of General Road Safety Campaigns

In total, 48.2% (CI: 44.9-51.5) of Niagara drivers have heard or seen any campaigns or programs about road safety in the past year. The remainder of respondents were unsure/don't know (2.1%, CI:1.2-3.0) and the rest (49.7%; CI: 46.4-53.0) did not know of any campaigns in the past year. From the beginning of the campaign to the end of the campaign, the percentage of drivers who recognized a *general* road safety campaign did not significantly change (43.0%, 43.3%, 39.0%). Among male drivers 18-44, 45.9% had heard of or seen some sort of road safety campaign in the past year.

Niagara drivers' awareness of Think and Drive Campaign

Overall, 32.2% (CI: 29.1-35.3) of Niagara drivers are aware of the Think and Drive campaign. As shown in Figure 14, there was no significant change in drivers' recognition of the campaign from Phase 1 to Phase 2. Although, phase 2 to phase 3 had a significant increase in recognition of the Think and Drive campaign; 29.9% (CI: 26.9-32.9) to 37.6%; CI: 34.4-40.8). Thus, the final phase of the campaign had the highest campaign recognition.

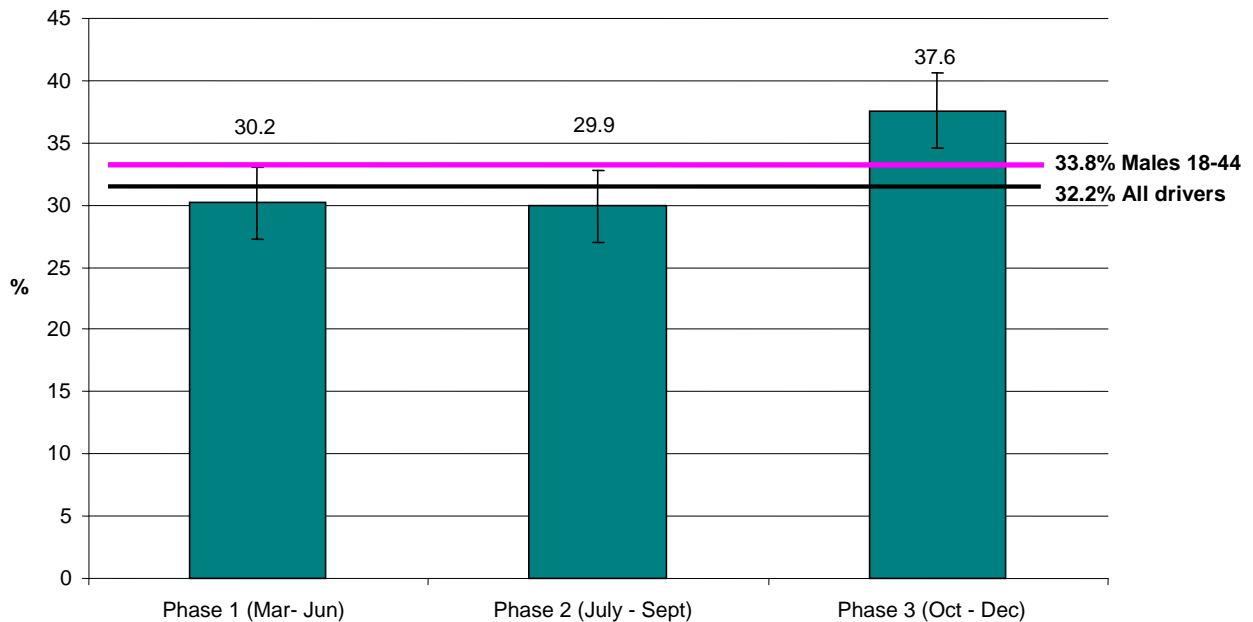


Figure 14. Awareness of the Think and Drive campaign, March to December 2008

Recognition of the Think and Drive campaign differed by age group. According to Figure 15, 18-24 year olds did not differ significantly from 25-44 when it comes to recognizing the Think and Drive campaign (36.1% (CI: 32.9-39.3) vs. 36.4% (CI: 33.2-39.6)). Yet, older drivers (65+) (26.9% (CI: 24.0-29.8)) were significantly less likely to know or hear of Think and Drive than the 18-24 and 25-44 age groups. Males and females did not differ in campaign recognition (males 32.9% (CI: 29.8-36.0) vs. females 31.8% (CI: 28.7-34.9)).

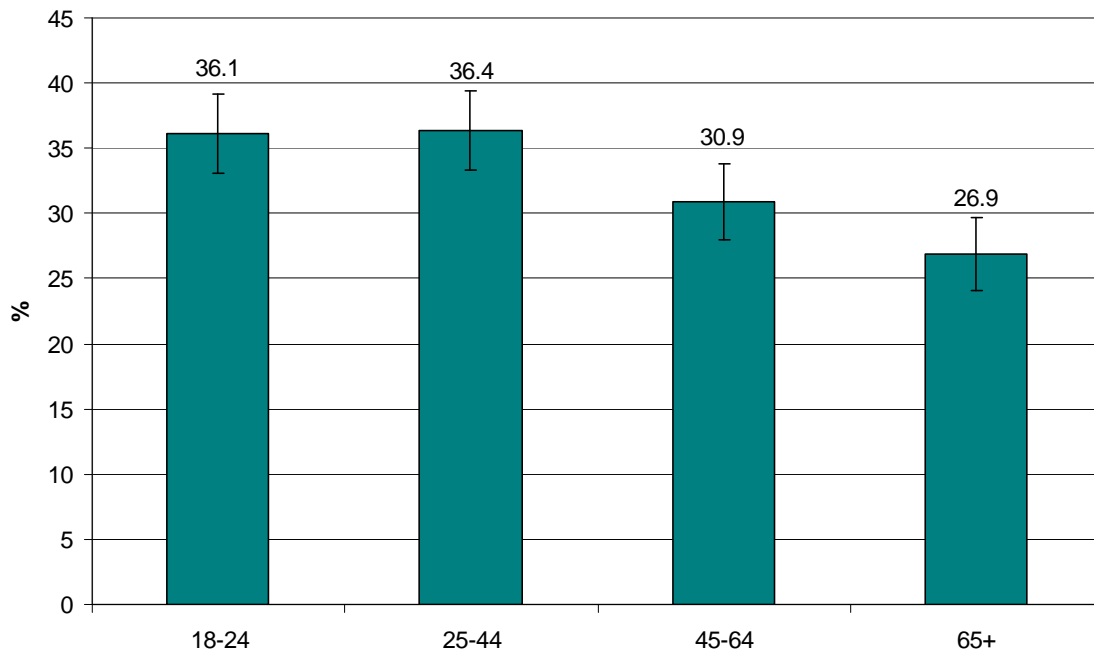


Figure 15. Awareness of Think and Drive campaign by age groups

How did Niagara drivers learn about the Think and Drive campaign?

The top three channels of communication that were most successful with Niagara drivers were television (39.6%), newspaper (12.4%), and posters (10.8%). Table 2 summarizes responses for other channels utilized throughout the Think and Drive campaign. The top 3 channels among males included: television (36.1%), radio (15.1%), and newspaper (13.4%). Top 3 channels among females included: television (41.9%), newspaper (11.4%) and posters (10.2%) (See Table 3).

Table 2. Channels of communication.

	%
Television	39.6
Newspaper	12.4
Poster	10.8
Radio	10.6
Display	5.8
Word of mouth	4.2
Bus advertisement	2.8
Flyer (specific)	2.4
Internet/website	2.0
Vehicle decal	2.0
Community event	1.3
t-shirt	1.1
Newsletter	0.9
Keychain	0.5
Live road safety challenge	0.4
Bookmark	0.0

Table 3. The top 3 channels associated with Think and Drive by age group.

Top channels	18-24	25-44	45-64	65+
1 st	Television	Television	Television	Television
2 nd	Posters/Community event	Poster	Newspaper	Poster
3 rd	Internet/web	Radio	poster	radio

Think and Drive Website Awareness

In total, 11.3% of Niagara drivers have heard of the Think and Drive website.

Appendix A

Road Safety

rdsaf_1

Now we would like to ask your opinions about road safety. We are interested in your opinions on serious car crashes. These are crashes that can result in serious injury or death.

Would you say that Niagara Region has a higher per capita rate of serious car crashes than other regions in Ontario, the same as other regions, less than other regions, or is this something you are unsure of?

- 1 higher rate than other regions
- 3 same rate as other regions
- 5 less than other regions
- d don't know
- r refused

Interviewer, if required: Per capita rates: Niagara=0.16; Durham=0.13; York=0.11; Ottawa=0.10; Windsor=0.10; Halton=0.08; Hamilton=0.06; London=0.06; Peel=0.04

rdsaf_2

I am going to read you a list of factors that sometimes lead to serious car crashes. For each, I will ask if you think this is a major factor, a minor factor or not a factor in serious car crashes in the Niagara Region.

rdsaf_2a

Poor weather conditions. Is this is a major factor, a minor factor, or not a factor in serious car crashes?

- 1 major factor
- 3 minor factor
- 5 not a factor
- d don't know
- r refused

rdsaf_2b

Speeding, that is driving too fast. Is this is a major factor, a minor factor, or not a factor in serious car crashes?

- 1 major factor
- 3 minor factor
- 5 not a factor
- d don't know
- r refused

rdsaf_2c

Mistakes made by a driver such as improper turns, not obeying road signs, or following too close. Is this is a major factor, a minor factor, or not a factor in serious car crashes?

- 1 major factor
- 3 minor factor
- 5 not a factor
- d don't know
- r refused

rdsaf_2d

Poor road conditions such as pot holes, short ramps, and so on. Is this is a major factor, a minor factor, or not a factor in serious car crashes?

- 1 major factor
- 3 minor factor
- 5 not a factor
- d don't know
- r refused

rdsaf_2e

Driving on rural roads. Is this is a major factor, a minor factor, or not a factor in serious car crashes?

Interviewer: If respondent indicates they "do not drive on rural roads" code dk.

- 1 major factor
- 3 minor factor
- 5 not a factor
- d don't know
- r refused

rdsaf_2f

Aggressive driving. Is this is a major factor, a minor factor, or not a factor in serious car crashes?

Interviewer: If asked, aggressive driving behaviours include tailgating, following too close, cutting off other drivers and related behaviours.

- 1 major factor
- 3 minor factor
- 5 not a factor
- d don't know
- r refused

rdsaf_2g

Drinking alcohol and driving. Is this is a major factor, a minor factor, or not a factor in serious car crashes?

- 1 major factor
- 3 minor factor
- 5 not a factor
- d don't know
- r refused

rdsaf_2h

Cell phone use. Is this is a major factor, a minor factor, or not a factor in serious car crashes?

- 1 major factor
- 3 minor factor
- 5 not a factor
- d don't know
- r refused

rdsaf_2i

Not paying full attention to driving because of things like eating, putting on makeup, or changing radio dials and so on. Is this is a major factor, a minor factor, or not a factor in serious car crashes?

- 1 major factor
- 3 minor factor
- 5 not a factor
- d don't know
- r refused

rdsaf_2j

Driving after using illicit drugs. Is this is a major factor, a minor factor, or not a factor in serious car crashes?

- 1 major factor
- 3 minor factor
- 5 not a factor
- d don't know
- r refused

rdsaf_3

I am going to read you a list of things that authorities could do to reduce serious car crashes. Choose the one you think would result in the greatest reduction of serious car crashes on roads in Niagara region: one, changes to car design; two, more traffic enforcement; three, changes to the roads; four, changes to traffic laws; or five, road safety education.

Interviewer if required: Changes to car design include more/better air bags and other safety features. More traffic enforcement includes more police presence & photo radar on roads, enforcing payment of all traffic/ ticket fines, etc. Changes to the roads include more stop signs, rumble strips, paved shoulders, wider lanes, etc. Changes to traffic laws include reducing speed limits, banning cell phones, heavier fines, periodic mandatory driving tests, etc. Road safety education includes safe driving campaigns, media ads, etc.

- 1-5 enter number
- d don't know
- r refused

rdsaf_4

What could you PERSONALLY change about your driving to reduce your chances of being in a serious car crash? [n]

Interviewer: DO NOT READ LIST. Enter 1 to all that apply.
n Nothing/not really anything I could do d don't know r refused

- 1 slow down / follow the speed limit/ leave more time
- 2 don't tailgate / don't follow other cars too closely
- 3 don't eat or drink / don't use the cell phone / don't change the radio
- 4 avoid night driving
- 5 pay more attention to my driving /stay focused on driving / don't let my

- mind wander/stay alert
- 6 avoid driving in poor weather conditions
- 7 don't drink alcohol and drive
- 8 be less aggressive/be more patient/ stay calm/ don't get annoyed with other drivers
- 9 don't drive when tired
- 10 don't use illicit drugs and drive
- 11 wear my seatbelt
- 12 monitor the road /drive defensively/ check mirrors /check my blind spot before changing lanes/be more aware/ be more cautious/ be more careful
- 13 other (specify)

exit_rdsaf

Appendix B

Road Safety Media Campaign

Rdcam_1

In the last year, have you seen or heard of any campaigns or programs about road safety?

Interviewer: if required, road safety focuses on making our roads safer and reducing the number of motor vehicle collisions.

- 1 yes
- 3 qualified yes (I think so, I guess so)
- 5 no
- 98 dk
- 99 refused

if <5,98,99> [goto Rdcam_3]

Rdcam_2

Can you tell me the names of the campaigns or programs?

Interviewer: DO NOT READ list, enter 1 to all that apply, probe once with: "Are there any others?"

- 1 Think and Drive or Think and Drive, a second is all it takes.
- 2 MADD (Mothers Against Drunk Driving)
- 3 OSAID (Ontario Students Against Impaired Driving)
- 4 NSDD (Niagara Stops Drunk Driving)
- 5 xxxxxx_Students Against Impaired Driving (where xxxxxx is name of school)
- 6 OCCID (Ontario Community Council on Impaired Driving)
- 7 Arrive Alive, Drive Sober
- 8 Preventit.ca
- 9 Click on this.ca

- 10 other (specify)
- 98 dk
- 99 refused

[if Rdcam_2 eq <1>][goto Rdcam_4]

Rdcam_3

Have you ever seen or heard about the Think and Drive Campaign, which uses the slogan "think and drive, a second is all it takes"?

- 1 yes
- 3 qualified yes (I think so, I guess so)
- 5 no
- 98 dk
- 99 refused

if <5,98,99> [goto exit_Rdcam]

Rdcam_4

How did you learn about the Think and Drive Campaign?

Interviewer: DO NOT READ list, enter 1 to all that apply, probe once with: "Are there any others?"

- 1 Bus advertisement
- 2 Poster
- 3 Display
- 4 Word of Mouth
- 5 Internet/website/online
- 6 Newspaper
- 7 Television
- 8 Radio
- 9 Community event/health fair/presentation
- 10 Live Road Safety Challenge
- 11 Newsletter
- 12 Flyer (specify)
- 13 Vehicle decal
- 14 Bookmark
- 15 Keychain
- 16 T-shirt

- 17 other (specify)
- 98 dk
- 99 refused

Rdcam_5

Have you ever seen or heard of the Think and Drive Website at www.thinkanddrive.net?

- 1 yes
- 3 qualified yes (I think so, I guess so)
- 5 no
- 98 dk
- 99 refused

if <5,98,99> [goto Rdcam_7]

Rdcam_6

Did you visit the Think and Drive Website?

- 1 yes
- 3 qualified yes (I think so, I guess so)
- 5 no
- 98 dk
- 99 refused

Rdcam_7

What was one of the messages of the Think and Drive Campaign?

Interviewer: DO NOT READ options. If respondent says "Think and Drive" or "Think and Drive, a second is all it takes", probe them to explain. Enter 1 to all that apply, probe once with: "Are there any others?"

- 1 Make Niagara's roads safer
- 2 Don't speed
- 3 Don't get distracted
- 4 Don't drink, or take drugs, and drive
- 5 Most serious collisions in Niagara occur on rural roads
- 6 Don't be careless on rural roads
- 7 Take the road safety challenge
- 8 Think about the risky driving behaviours you may do
- 9 We can all help to prevent motor vehicle collisions
- 10 Main causes of serious collisions: speed, impairment and driver error
- 11 Males are involved in most serious collisions in Niagara.
- 12 Niagara has a bad record for fatal and serious injury motor vehicle collisions
- 13 Other (specify)
- 98 dk
- 99 refused