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HALDIMAND-NORFOLK HEALTH UNIT

**The Impact of the Communities and Hospitals
Against Trauma (C.H.A.T) Program
in Norfolk County:
Analysis of Self-Reported Current Risk-Taking Behaviour and
Self-Reported Future Behavioural Intentions:
Implications for Injury Prevention Programming**

HALDIMAND-NORFOLK
HEALTH UNIT

Acknowledgements

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I would like to thank the following participants for their contributions to the The Impact of the C.H.A.T Program in Norfolk County: Analysis of Self-Reported Current Risk-Taking Behaviour and Self-Reported Future Behavioural Intentions: Implications for Injury Prevention Programming

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Communities and Hospitals Against Trauma (C.H.A.T.) Program Evaluation - 2007

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Brant Haldimand-Norfolk Catholic District School Board

Queensway Tire

Volunteers (speakers)

Chris Mussche

Ron Rattie

Harold Willbanks

Chris Burggraeve

Doug Sibbett

Kevin Waddle

Volunteers (make-up artists)

John Batty

John Moore

Volunteers (accident victim)

Justin Beck



In Honor of
Harold Willbanks
1954-2008

Harold Willbanks was a dedicated speaker for the C.H.A.T program for over 15 years. Harold knew first hand the long term effects of drinking and driving. Harold sustained serious injuries leaving him paralyzed as a quadriplegic for over 34 years. Despite this tragic event, Harold found the strength to be an inspirational speaker to youth of Haldimand and Norfolk. He shared his story and spoke of the emotional and physical scars resulting from the accident. Harold Willbanks was a committed member of the C.H.A.T team and will be sadly missed.



Abstract

The Communities and Hospitals Against Trauma (C.H.A.T) Report is the first focused C.H.A.T pre-test, post-test formal impact evaluation to be completed for Haldimand and Norfolk. The C.H.A.T program consists of two parts: a school assembly and a hospital-based injury prevention program. During the school assembly, a graphic media presentation about risky behaviours and injuries was presented. After that, adolescents who are considered “high risk” take a tour of the hospital and are exposed to a mock trauma in the emergency department. The study was intended to determine whether the C.H.A.T program was operating as it was intended to in changing attitudes, knowledge and future behavioural intentions concerning consequences due to alcohol, drug impairment and other risk-taking behaviours. Therefore, the primary objective of this process evaluation was to determine the impact of the C.H.A.T program. The elements of the C.H.A.T program that were studied included: alcohol use, driving after drinking and sub-

stance use, seatbelt use, driving and safety, distractions and program effectiveness. One hundred and twenty three students completed the survey from Fall 2006 to Fall 2007. Results from the pre-test, post-test study demonstrate that there were some positive shifts in future behavioural intentions for some risk-taking behaviours. Participants praised the program and considered it to have a high impact. This evaluation can assist stakeholders in future program planning. The report can be downloaded from the Haldimand-Norfolk Health Unit web site (www.hnhu.org).

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Introduction

Background of C.H.A.T

The Communities and Hospitals Against Trauma (C.H.A.T) program is an adolescent injury prevention program that was launched in 1994 in response to the high number of local acute trauma cases being admitted to the regional trauma centre at the Hamilton General Hospital. Based on the number of admissions, the data suggested that an educational program was needed to change awareness and attitudes among teenagers to influence their risk-taking behaviours and reduce injuries. Therefore, the goal of the C.H.A.T program is to prevent injuries among adolescents resulting from risk-taking behaviours in Haldimand and Norfolk Counties

The C.H.A.T program consists of two parts: a school assembly and a hospital-based injury prevention program. At the school assembly, a graphic media presentation about risky behaviours and injuries was presented. Subsequently, a speaker discussed how risk-taking behaviours can negatively affect a person's life.

The second part of the program took place in the emergency department at Norfolk General Hospital. Each school was asked to select 30 students that were deemed "risk takers" to participate in the inten-

sive one-day program. The students required parental consent to participate in the program. First, the students were brought into a room where they were given an overview of the program and an opportunity to get acquainted with staff. At this time, the students were asked to complete an evaluation. The students were then led to a mock trauma incident in the emergency department, where a peer was being treated for injuries relating to a motor vehicle crash involving a drunk driver. The students were then brought back into the orientation room, where they listened to a variety of speakers, including a paramedic, funeral director, police officer, a motor vehicle traffic crash survivor and substance abuse prevention educator that discussed their perspectives on risk-taking behaviours and their negative implications. Finally, the students were led outside to witness the fire department enact an extrication resulting from a motor vehicle crash. Finally, the group had a concluding discussion to share how they felt about what they had experienced and were then asked to complete an evaluation questionnaire.

Theoretical Frameworks

The C.H.A.T program was designed using the fear-based health promotion approach. A fear appeal approach can be a powerful persuasive if it induces

strong perceptions of threat and fear, which in turn motivate action.¹ It is fundamentally understood that the greater the threat, the greater the motivation to act.¹ People respond to fear appeals depending on their assessment (perceived severity and susceptibility) of the threat and perceived efficacy.¹ Several theories in health promotion guide program planners in health promotion planning and implementation. The Health Belief Model is frequently used in health behaviour applications that also guided the C.H.A.T program.² Perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action and self-efficacy are six constructs representing the perceived threat and net benefits in the Health Belief Model.² For example, it is assumed that if a student is exposed to the consequences of unhealthy risk-taking behaviours, that student is more likely to perceive that he/she is susceptible to serious injury and can control or prevent that injury from occurring. The utilization of both the fear appeal health promotion approach and the Health Belief Model are effective in changing maladaptive lifestyle behaviour.^{1,2} It is important to recognize that other studies similar to the C.H.A.T program that have utilized a fear appeal health promotion approach had positive impacts.³





Methods

Study Objectives

At the macro level, this pre-test, post-test study design was intended to determine if the C.H.A.T program was operating as intended with regard to changing attitudes, knowledge and future behavioural intentions about consequences of alcohol, drug and other risk-taking behaviours in order to prevent unintentional injuries. The underlying assumption is that future behavioural intentions are affected by attitudes and knowledge. Therefore, the primary objective of this process evaluation was to determine the impact of the C.H.A.T program. The elements of the C.H.A.T program that were studied included: alcohol use, driving after drinking and substance use, seatbelt use, driving and safety, distractions and program effectiveness. The evaluation can be used to determine whether the C.H.A.T program is changing future behaviour and can also assist program planners in future injury prevention programming. Moreover, the evaluation can be used as a model for other C.H.A.T programs.

The objectives of the study were:

1. To determine current alcohol, drug and other risk-taking behaviours (alcohol use, driving after drinking and substance use, seatbelt use, driving

and safety and distractions), with the underlying assumption that current behaviour is affected by attitudes and knowledge.

2. To determine changes in future alcohol, drug and other risk-taking behavioural intentions (alcohol use, driving after drinking and substance use, seatbelt use, driving and safety and distractions) with the underlying assumption that current behaviour is affected by attitudes and knowledge.
3. To determine students' perspective of the C.H.A.T program qualitative responses.

Survey Instrumentation

The pre- and post-test surveys were developed by Deanna Morris, Epidemiologist at the Haldimand-Norfolk Health Unit, in collaboration with program planners (see Appendix 1 and Appendix 2). A cover letter accompanied the survey. Existing instruments and research studies were collected and reviewed in preparation for this research study.^{4,5} In developing the instruments, some questions were adopted from existing instruments such as the Canadian Community Health Survey (CCHS) and The Ontario Student Drug Use and Health Survey (OSDUHS). The pre-survey consisted of six modules: sample demographics, alcohol use, driving after drinking and substance abuse, seatbelt use, driving and safety and distract-

tions. The post-test consisted of identical items, with the addition of questions that measured the overall impact of the program. Questions from the pre-test measured current behaviour, while questions from the post-test measured future behaviour intentions.

A pilot was conducted to determine the validity of the instrument. Face validity and predictor validity were assessed by a test group to determine whether the instrument made sense intuitively and could successfully predict the outcome of interest. Significant changes were made to the survey as a result of the pilot. It is fundamentally understood that intended changes in students' knowledge, attitudes and future behaviour is very subjective and difficult to measure. Anticipated difficulties in conducting a prospective randomized control study that examined participants' behaviour at different times was carefully considered, but anticipated difficulties in trying to design a comparable control group and staff and time limitations prohibited this more favourable research design.

Sampling Selection and Administration Methods

The study was approved by the Haldimand-Norfolk Health Unit Ethics Board on September 7, 2006. A non-probability consecutive sampling method was used as a way of taking every participant who participated in the C.H.A.T program from September of 2006 to October 2007. The sample consisted of 123 adolescents who participated in the C.H.A.T program from September 2006 to October 2007 and were considered "at risk" youth. "At risk" youth were defined as students' who engages in unhealthy or healthy risk taking behaviours. To illustrate this position, healthy risk-taking behaviours tend to have a positive impact on an adolescent's development and may include sports, volunteer activities, travel and making new friends to name a few. Unhealthy risk-taking behaviours can have a negative impact on an adolescent's overall health status and well-being and can include reckless driving, drug use and self-mutilation to name a few.

Six surveys were not useable because they were incomplete, yielding approximately a 95% response rate. Positive reinforcements to encourage participation included a draw for a gift certificate and Haldimand-Norfolk Health Unit promotional items. Since this sampling method would be deemed less favourable by the scientific community, it is important to note that the researcher acknowledges that a more favourable sampling method would have been to implement a longitudinal pre-test, post-test design and

include a comparable control group. As mentioned, this type of rigorous research design was not selected based on time constraints, staffing limitations and barriers in trying to design a comparable control group.

Students were brought to Norfolk General Hospital in small groups. The group was first brought into a room where they were given the pre-test survey to complete and were asked to complete the demographic information. At the end of the program, students were asked to complete the post-test survey and to complete the demographic information again. The demographic information was used to match the pre- and post-test surveys. However, some surveys were not useable because the researcher was unable to match the pre-and post-tests due to inconsistent answers.

Statistical Analysis

The majority of information presented was in the form of frequencies, cross tabulations and chi-squares. Collapsing categories were employed prior to the calculation of the 2 X 2 chi-square statistics. In particular, collapsing of "no" and "undecided" in the post-test were used to increase cell count. Due to cell counts less than five, Yates correction was employed as a conservative test of the null hypothesis. It is important to note that the question pertaining to grooming was removed from the survey due to discrepancies in reporting.





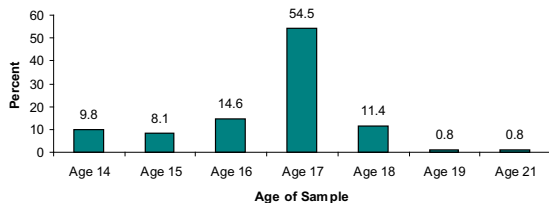
Results

The first section describes the sample. Sample characteristics include age, sex and grade.

1.0 Sample Demographic Information

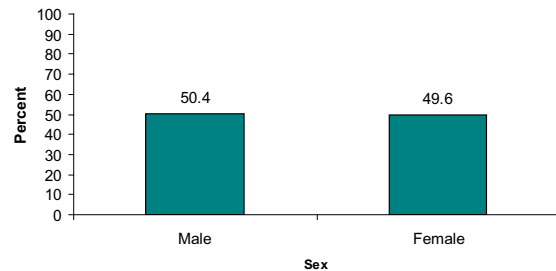
The majority of students who participated in the C.H.A.T program were 17 (54.5%), (n=17), while 14.6% (n=18) were 16 and 11.4% were 18 (n=18), (see Figure 1). The average age was 16. It is important to note that the age of the sample is not normally distributed. The results predominately reflect the responses of participants age 17.

Figure 1: Age of Sample



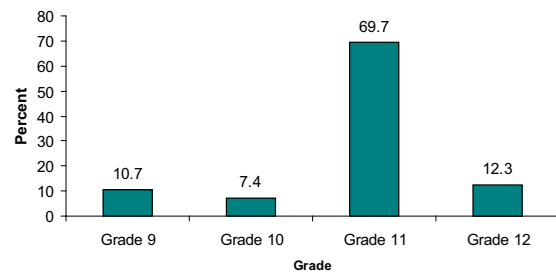
A slightly higher percentage of males (50.4%), (n=62) than females (49.6%), (n=61) participated in the C.H.A.T program (see Figure 2).

Figure 2: Sex of Sample



A higher percentage of students were in Grade 11 (69.7%), (n=85), while a lower proportion were in Grades 9, 10 and 12 (30.4%), (n=37) (see Figure 3). It is important to note that the grade of the sample is not normally distributed. The results predominately reflect the responses of participants in Grade 11.

Figure 3: Grade of Sample



2.0 Alcohol Use

In Canada, approximately 30% of all fatalities on roads involve drinking and driving.⁶ In addition, 50% of trauma patients acquire their injuries while under the influence of alcohol.⁷ Particularly interesting, binge drinkers are 14 times more likely to report alcohol-impaired driving than non-binge drinkers.⁸ The Canadian Mental Health Association (CMHA) defines binge drinking as consuming five or more drinks on one occasion.

Drank Alcohol in Lifetime and Past 12 Months

Students were asked questions about alcohol use. Eighty-seven percent (n=107) of students surveyed had tried alcohol in their lifetime (more than a sip of alcohol) (see Figure 4). Alcohol was defined as any drink such as beer, wine or liquor (rum, whiskey, vodka, etc.) or any drink that has alcohol, such as coolers, or other mixed drinks. Of the proportion of students who tried alcohol and answered the question, 89.6% (n=95) tried alcohol in the past 12 months (see Figure 5).

Figure 4: Percentage of Students who Drank Alcohol in Their Lifetime

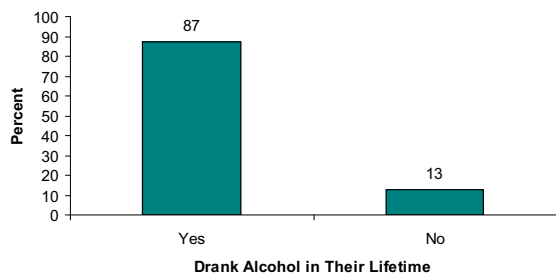
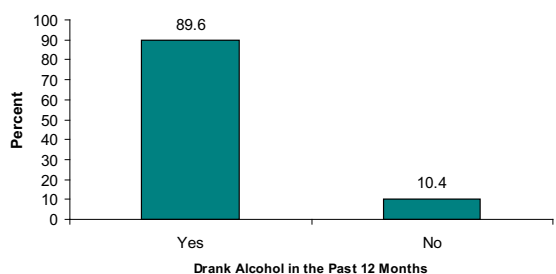


Figure 5: Percentage of Students who Drank Alcohol in the Past 12 Months



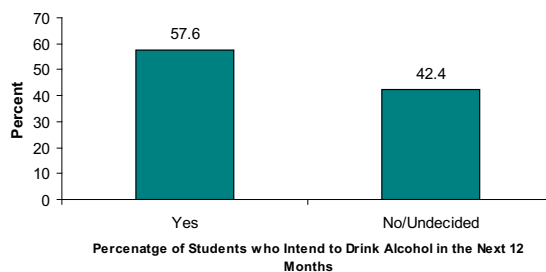
There was a statistically significant difference between current drinking behaviour and intended future drinking behaviour; $\chi^2_{h, corr} (1, N=103) = 9.27, p = .006$ (see Table 1). Of the 92 students who reported that they

drank alcohol in the past 12 months, more than half (57.6%), (n=53) reported that they would continue to drink alcohol in the next 12 months, while 42.4% (n=39) reported that they would not drink alcohol or were not sure if they would drink alcohol in the next 12 months.

Table 1: Changes in Intended Future Alcohol Consumption in the Next 12 months

Pre-Test	Post-Test		
	Percentage of Students Who Intend to Drink Alcohol in the Next 12 Months		
	Yes	No/ Undecided	Total
Percentage of Students Who Consumed Alcohol in the Past 12 Months	57.6% (n=53)	42.4% (n=39)	100% (n=92)

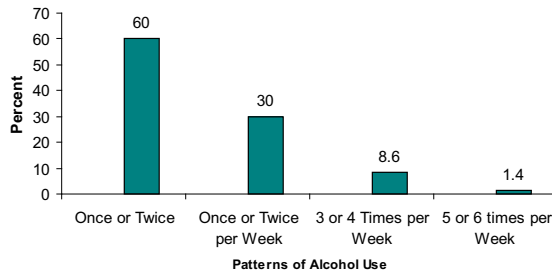
Data Notes: Excluded don't know from pre-test; included undecided in post-test. Very likely and likely were collapsed and undecided, unlikely and very unlikely were collapsed to increase cell count. Missing data was excluded. Cautionary Note: Cell counts less than five in some cells may inflate the Chi-Square (not shown here). The continuity correction was used to test the null hypothesis. * p<0.05



Drank Alcohol in the Past Four Weeks

Seventy-nine percent (n=70) of students surveyed had consumed alcohol in the past four weeks. Among them, 60% (n=42) reported drinking once or twice per week, 30% (n=21) once or twice each week, 8.6% (n=6) three or four times each week and 1.4% (n=1) reported drinking alcohol five to six times each week (see Figure 6).

Figure 6: Patterns of Alcohol Use in the Past Four Weeks

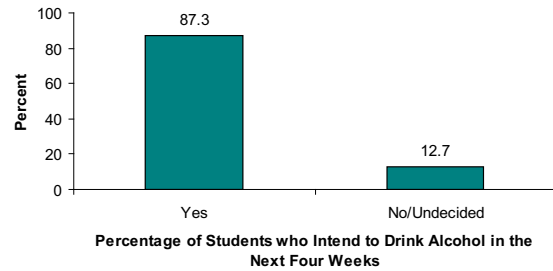


As shown in Table 2, there was a statistically significant difference between drinking behaviour in the past four weeks and intended drinking behaviour in the next four weeks, $\chi^2_{h, corr} (1, N=64) = 15.5, p = .000$. Of the 55 students who reported that they drank alcohol in the past four weeks, 87.3% (n=48) reported that they would drink alcohol in the next four weeks, while 12.7% (n=7) reported that they would either not drink alcohol in the next four weeks or were not sure.

Table 2: Changes in Intended Future Alcohol Consumption in the Next Four weeks

Pre-Test	Post-Test		
	Percentage of Students Who Intend to Drink Alcohol in the Next Four Weeks		
	Yes	No/Undecided	Total
Percentage of Students Who Consumed Alcohol in the Past Four Weeks	87.3% (n=48)	12.7% (n=7)	100% (n=55)

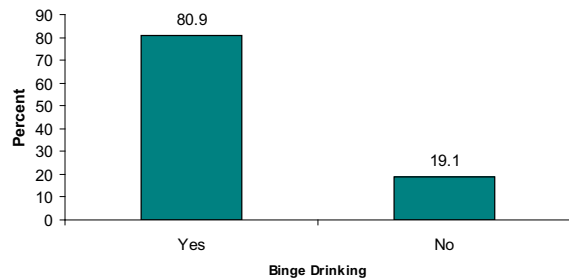
Data Notes: Excluded don't know from pre-test; included undecided in post-test. Cautionary Note: Cell counts less than five in some cells may inflate the Chi-Square (not shown here). The continuity correction was used to test the null hypothesis. $p < 0.05$



Binge Drinking

As shown in Figure 7, 80.9% (n=55) of students who reported drinking alcohol in the past four weeks reported binge drinking. Binge drinking is defined as having five or more drinks of alcohol on the same occasion.

Figure 7: Binge Drinking



There was no statistically significant difference between current binge drinking behaviour and intended future binge drinking behaviour.

3.0 Driving After Drinking and Substance Use

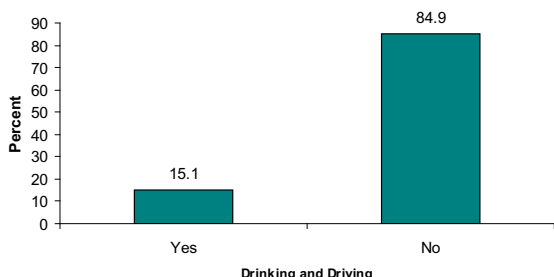
An overwhelming body of research demonstrates that alcohol use by drivers can severely increase the risk of collision resulting in bodily harm and death.⁹ According to *The Road Safety Monitor: Drinking and Driving (2006)*, in 2004, 815 Canadians were killed in crashes involving a drinking driver.⁹ Approximately 17.5% of Canadians report that they have driven at least once in the past 30 days within two hours of drinking any amount of alcohol.⁹ Particularly interesting, in 2005, approximately 15% of drivers between the ages of 16 and 24 reported having driven within two hours of consuming alcohol during the past 30 days.¹⁰ Although it is assumed that designated drivers decrease the number of Motor Vehicle Traffic Crashes (MVTC), it was found that there are no studies that have examined whether the use of designated drivers actually decreases alcohol-related car crashes and injuries.¹¹

Moreover, substance use, including prescription medications, over-the-counter remedies and illegal substances, can increase impairment while operating a motor vehicle.¹² Of particular interest, cannabis use increases the crash risk for drivers between 1.5 and 2.5 times that of sober drivers.¹³ Cannabis impairs behavioural and cognitive skills, including those related to safe driving.¹⁴ According to *The Drug Use Among Ontario Students 1977-2005 report*, approximately one-fifth of drivers in Grades 10 to 12 report driving a motor vehicle within one hour of using cannabis at least once during the past 12 months.¹⁵

Drinking and Driving

Students were asked if they had driven a motor vehicle in the past 12 months. Motor vehicle was defined as a car, truck or van. Of the total sample (n=123), 69.1% (n=85) reported driving a motor vehicle in the past 12 months, while 30.9% (n=38) reported that they had not. Of the students who drank alcohol in the past 12 months and reported driving a motor vehicle, 15.1% (n=11) reported driving within an hour of having two or more drinks of alcohol, while 84.9% (n=62) did not (see Figure 8). There was no statistically significant difference between current drinking and driving behaviour and future behaviour.

Figure 8: Drinking and Driving



Driving After Substance Use

Overall, 50.9% (n=58) of students reported using marijuana or hashish in the past 12 months (see Figure 9).

As shown in Table 3, there was a statistically significant difference between current substance use behaviour (marijuana or hashish) in the past 12 months and intended substance use behaviour (marijuana or hashish) in the future, $\chi^2_{h, corr} (1, N=103) = 18.01, p = .000$. Overall, of the 54 students who reported using marijuana or hashish during the past 12 months, 51.9% (n=28) reported that they were either unsure or not going to use marijuana or hashish in the future,

while 48.1% (n=26) would continue to do so in the future.

Figure 9: Substance Use

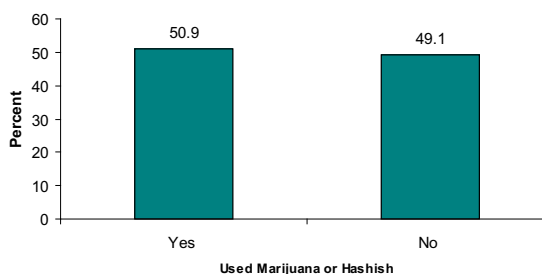


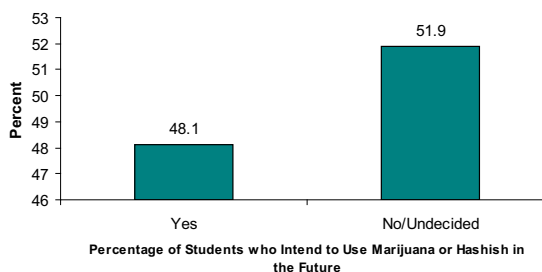
Table 3: Changes in Intended Future Substance Use (Marijuana or Hashish) Behaviour

Pre-Test	Post-Test Percentage of Students Who Intend to Use Marijuana or Hashish in the Future		
	Yes	No/ Undecided	Total
Percentage of Students Who Reported Using Marijuana or Hashish in the Past 12 Months	48.1% (n=26)	51.9% (n=28)	100% (n=54)

Data Notes: Excluded don't know from pre-test; included undecided in post-test. Very likely and likely were collapsed and undecided, unlikely and very unlikely were collapsed to increase cell count. Missing data was excluded.

Cautionary Note: Cell counts less than five in some cells may inflate the Chi-Square (not shown here). The continuity correction was used to test the null hypothesis.

* p<.05



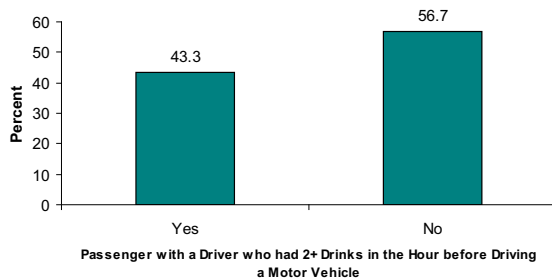
Students were also asked how often in the past 12 months they had driven within one hour of using marijuana or hashish. Of the students who reported

using marijuana or hashish, 36.1% (n=13) reported that they had driven within an hour of using marijuana and hashish. There was no statistically significant difference found between substance use (marijuana or hashish) and driving a motor vehicle within one hour of using marijuana or hashish.

Designated Driver

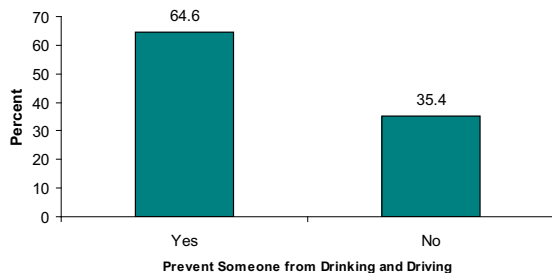
Students were also asked whether in the past 12 months they had been a passenger with a driver who had two or more drinks in the hour before driving a motor vehicle. Overall, 56.7% (n=68) of students had not been a passenger with a driver who had two or more drinks in the hour before driving a motor vehicle, while 43.3% (n=52) reported having done so (see Figure 10). There was no statistically significant difference found between current and future behaviours of being a passenger with a driver who had two or more drinks in the hour before driving.

Figure 10: Passenger with a Driver who had been Drinking



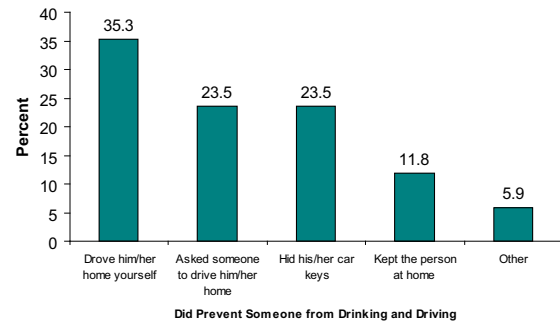
Students were also asked if they tried to prevent this person from driving on the most recent occasion. Overall, 64.6% (n=31) of students did not try to prevent this person from driving, whereas 35.4% (n=17) did (see Figure 11). There was no statistically significant difference between currently preventing someone to drink and drive and future behaviour intentions.

Figure 11: Tried to Prevent Someone from Drinking and Driving



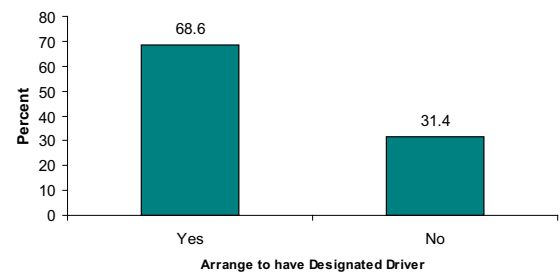
Of the percentage of students who would try to prevent this person from driving, a higher percentage reported that they would drive him/her home themselves (35.3%), (n=6) rather than asking someone else to drive him/her home (23.5%), (n=4) or hiding his/her car keys (23.5%), (n=4) (see Figure 12).

Figure 12: Prevent Someone from Drinking and Driving



Students were asked if they had a designated driver when going out with friends. A designated driver is defined as someone who decides ahead of time not drink any alcohol in order to drive a group home safely. Overall, 68.6% (n=72) of students reported that they had arranged to have a designated driver, while 31.4% (n=33) had not (see Figure 13). No statistically significant difference was found between current and future behaviour to arrange to have a designated driver.

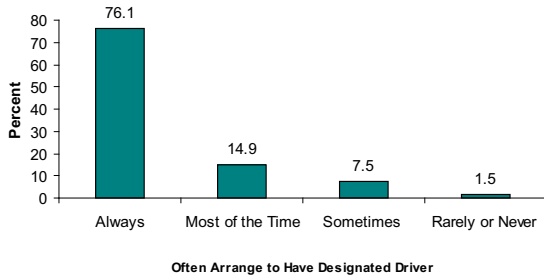
Figure 13: Designated Driver



Of the proportion who currently arrange to have a designated driver, 76.1% (n=51) arrange to have a designated driver always, 14.9% (n=10) most of the time, 7.5% (n=5) sometimes and 1.5% (n=1) rarely or never make arrangements to have a designated driver (see Figure 14).

"It made me have a different look at the times I party, making some choices that I wouldn't have made if I knew what I learned today".

Figure 14: Made Arrangements for Designated Driver



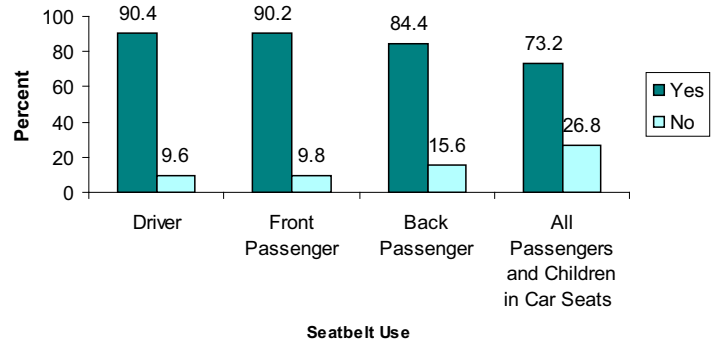
4.0 Seatbelt Use

Non-users of seatbelts have a higher risk of involvement in potentially fatal motor vehicle traffic crashes than do seatbelt users, because they are not afforded the protection of seatbelts when a collision occurs and because they have a greater chance of involvement in a potentially fatal collision in the first place.¹⁶ Some reasons that people do not use seatbelts is discomfort, forgetfulness/laziness and a perceived low risk of injury.¹⁷

Overall, of the students who reported driving a motor vehicle, 90.4% (n=75) reported that they fastened their seatbelts when they drive, 90.2% (n=10) when they are the front passenger, 84.4% (n=103) fastened their seatbelts when they were the back passenger; 73.2% (n=60) insisted that all passengers have their seatbelts fastened and that children are in their car seats (see Table 4). According to *Transport Canada's Surveys of Seat Belt Use in Canada 2004-2005*, it is particularly interesting that that rate of seatbelt usage in Canada is lower among backseat occupants.¹⁸

Table 4: Seatbelt Use

	Yes	No	Total
Fasten Seatbelt When Driver	90.4% (n=75)	9.6% (n=8)	100% (n=83)
Fasten Seatbelt When Front Passenger	90.2% (n=110)	9.8% (n=12)	100% (n=122)
Fasten Seatbelt When Back Passenger	84.4% (n=103)	15.6% (n=19)	100% (n=122)
Insist That All Passengers Have Their Seatbelts Fastened and Children are in Car Seats	73.2% (n=60)	26.8% (n=22)	100% (n=82)



There was no statistically significant difference between current behaviour and future behavioural intentions of wearing a seatbelt when driving a motor vehicle or while being a front passenger.

There was a significant statistical difference between current behaviour and future behavioural intentions of wearing a seatbelt when being a back passenger, $\chi^2_{h, corr} (1, N=118) = 12.2, p = .000$ and insisting that all passengers have their seatbelts fastened and that all young children are in car seats when driving a motor vehicle, $\chi^2_{h, corr} (1, N=80) = 4.25, p = .039$ (see Table 5). Of the students who reported that they rarely or never fasten their seatbelts when they are the back passenger, 70.6% (n=12) intend to do so in the future. Of the proportion of students who sometimes, rarely or never insist that all passengers have their seatbelts fastened and that all children are in their car seats, 70.0% (n=14) reported that they intend to do so in the future. This may be explained by the fact that students viewed a media clip that showed the impact of a back passenger who did not have their seatbelt fastened during a motor vehicle traffic crash. As a result, the back passenger projected from the backseat of the car and came into contact with the other passengers and killed everyone in the vehicle.

"It motivated me to always wear a seatbelt and always have a safe ride home".



"This changed my opinion about seatbelts".

Table 5: Seatbelt Use Pre- and Post-Test

Pre-Test	Post-Test Seatbelt Use Future Behavioural Intentions		
	Yes	No/ Undecided	Total
Rarely or Never Fasten Seatbelt When Back Passenger	70.6% (n=12)	29.4% (n=5)	100% (n=17)
Sometimes, Rarely or Never Insist That All Passengers Have Their Seatbelts Fastened and Children are in Car Seats	70.0% (n=14)	30.0% (n=6)	100% (n=20)

Data Notes: Excluded don't know from pre-test; included undecided in post-test. Very likely and likely were collapsed and undecided, unlikely and very unlikely were collapsed to increase cell count. Missing data was excluded.

Cautionary Note: Cell counts less than five in some cells may inflate the Chi-Square (not shown here). The continuity correction was used to test the null hypothesis.

* $p < 0.05$

5.0 Driving and Safety

In Canada, nearly 80% of crashes and 65% of near-crashes involve some form of driver inattention within three seconds before the event.¹⁹ Driving when fatigued, with two or more passengers (especially teenagers) while playing with the CD player or radio, using a cell phone, eating as well as driving too fast and aggressively can increase the risk of a motor vehicle crash.¹⁹ According to the National Highway Traffic Safety Administration, drowsiness and fatigue are significant problems that increase a driver's risk of a crash or near-crash.¹⁹

The risk of having a motor vehicle traffic crash also increases as the number of passengers increases.²⁰ "Low tech" tasks, such as adjusting the radio, cassette or CD player, were also found to be major causes of distraction-related crashes.²¹ The most common distraction for drivers is the use of cell phones.¹⁹ Dialing a handheld cell phone increases the risk of a crash or near-crash by almost three times, while talking on or listening to a handheld device increases the risk of a crash or near-crash by 1.3 times.¹⁹ Moreover, according to the World Health Organization (WHO), an increase of 1km/h in mean traffic speed typically results in a 3% increase in the incidence of injury crashes or a 4% to 5% increase of fatal crashes.²⁰

Students were asked questions about driving and safety. First, students were asked if they drove a motor vehicle when they felt tired. Of the proportion who drove a motor vehicle, 68.3% (n=56), reported driving a motor vehicle while feeling tired, 27.8% (n=22) reported that they had driven a motor vehicle with passengers while feeling tired and 32.1% (n=25) reported driving a motor vehicle with more than two teenagers present.

There, $\chi^2_{h, corr}$ was a statistically significant difference between current behaviour and future behaviour intentions of driving tired, $\chi^2_{h, corr} (1, N=76) = 17.51, p = .000$, driving passengers when feeling tired, $\chi^2_{h, corr} (1, N=73) = 22.25, p = .000$ and driving a motor vehicle with more than two teenagers and no adult present, $\chi^2_{h, corr} (1, N=68) = 20.21, p = .000$ (see Table 6). Overall, of the proportion who reported that they drove while tired (often or sometimes), 53.8% (n=14) stated that they would either not drive tired or were not sure whether they would drive tired in the future, and 45.5% (n=10) stated that they would either not drive passengers when they were tired or were not sure whether they would drive passengers when they were tired. Of the 24 students who reported that they currently drive a motor vehicle with more than two teenagers and no adult present, 87.5% (n=21) intend to do so in the future.

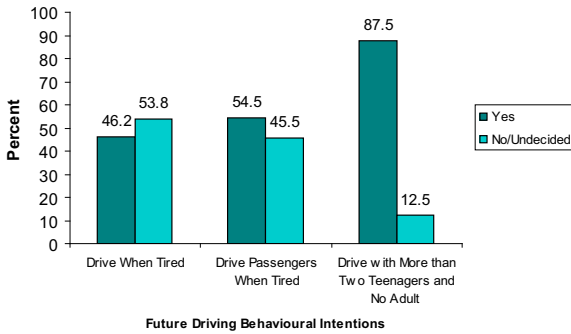
Table 6: Driving Behaviour Pre-Post Test

Pre-Test	Post-Test Future Driving Behaviour		
	Yes	No/ Undecided	Total
Current Driving Behaviour			
Drive a Motor Vehicle While Tired	46.2% (n=12)	53.8% (n=14)	100% (n=26)
Drive Passengers While Feeling Tired	54.5% (n=12)	45.5% (n=10)	100% (n=22)
Drive a Motor Vehicle With More Than Two Teenagers and No Adult Present	87.5% (n=21)	12.5% (n=3)	100% (n=24)

Data Notes: Excluded don't know from pre-test; included undecided in post-test. Very likely and likely were collapsed and undecided, unlikely and very unlikely were collapsed to increase cell count. Missing data was excluded.

Cautionary Note: Cell counts less than five in some cells may inflate the Chi-Square (not shown here). The continuity correction was used to test the null hypothesis.

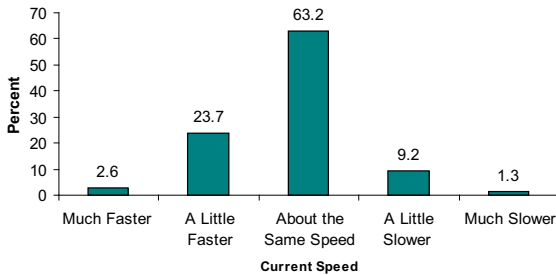
* $p < 0.05$



Speed

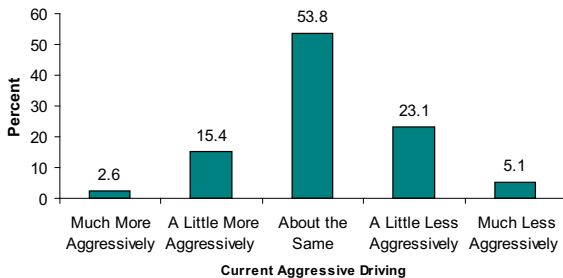
Of the total number of students who reported driving a motor vehicle in the past 12 months, compared to other drivers, a higher proportion drive about the same speed [(63.2%), (n=48)], 23.7% (n=18) drive a little faster and 9.2% (n=7) drive a little slower (see Figure 15).

Figure 15: Current Speed Compared to Other Drivers



Students were also asked to compare how aggressively they drive compared to other drivers. Overall, 53.8% (n=42) reported that they drive about the same, 23.1% (n=18) drive a little less aggressively and 15.4% (n=12) drive a little more aggressively (see Figure 16).

Figure 16: Current Aggressive Driving Behaviour Compared to Other Drivers



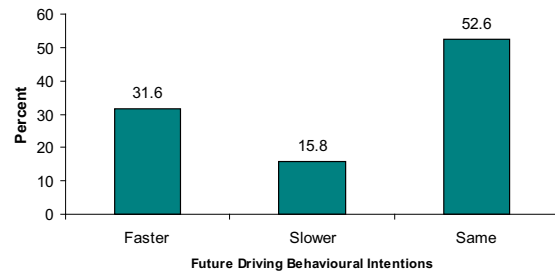
There was a statistically significant difference between current behaviour and future behaviour intentions of driving speed, $\chi^2(4, N=65) = 24.94, p = .000$, and aggressive driving, $\chi^2(4, N=67) = 32.94, p = .000$ (see

Table 7 and Table 8). Since cell counts are less than five, interpret with caution. Of the proportion of students who reported driving faster (much faster, a little faster) compared to other drivers, a higher proportion reported that they would drive the same speed as other drivers (52.6%) (n=10) (see Table 7) Of the students who reported that they drive aggressively (much more aggressively, a little more aggressively), a higher proportion anticipate driving aggressively (46.2%) (n=6) in the future. As a result, the program did not affect driving behaviour (see Table 8)

Pre-Test Current Driving Behaviour	Post-Test			Total
	Faster	Slower	Same	
Drive Faster	31.6% (n=6)	15.8% (n=3)	52.6% (n=10)	100% (n=19)

Table 7: Driving Speed

Data Notes: Excluded don't know from pre-test; included unde-



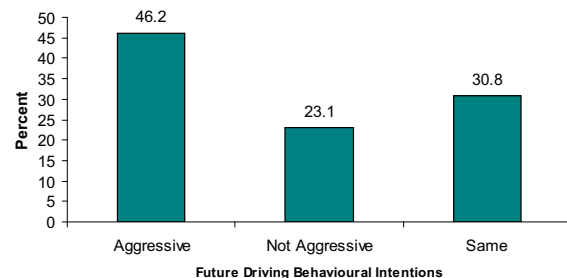
cided in post-test.

Pre-Test Current Driving Behaviour	Post-Test			Total
	Aggressive	Not Aggressive	Same	
Drive Aggressively	46.2% (n=6)	23.1% (n=3)	30.8% (n=4)	100% (n=13)

Cautionary Note: Cell counts less than five in some cells may inflate the Chi-Square (not shown here).

* p<0.05

Table 8: Aggressive Driving



Data Notes: Excluded don't know from pre-test; included undecided in post-test.

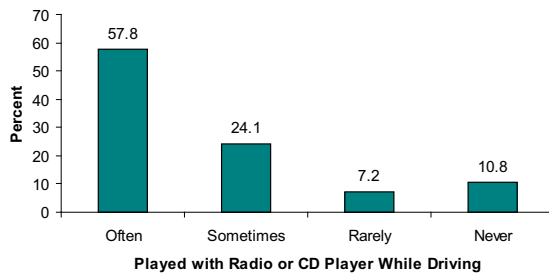
Cautionary Note: Cell counts less than five in some cells may inflate the Chi-Square (not shown here).

* p<0.05

6.0 Distractions

Students were asked questions about distractions. First, students were asked how often they played with the radio or CD player while driving a motor vehicle. Of the proportion of students who reported driving a motor vehicle in the past 12 months, 81.9% (n=68) reported that they played with the radio or CD player while driving a motor vehicle (often, sometimes) (see Figure 17).

Figure 17: Played with Radio or CD Player While Driving



As shown in Table 9, there was a statistically significant difference between current behaviour and future behavioural intentions of playing with the radio or CD player while driving a motor vehicle, $\chi^2_{h, corr} (1, N=77) = 21.39, p = .000$. Overall, of the 63 students who reported playing with the radio or CD player while driving a motor vehicle, 85.7% (n=54) reported that they would continue to play with the radio or CD player while driving a motor vehicle in the future, while 14.3% (n=9) reported that they were either not sure or would change their future behaviour.

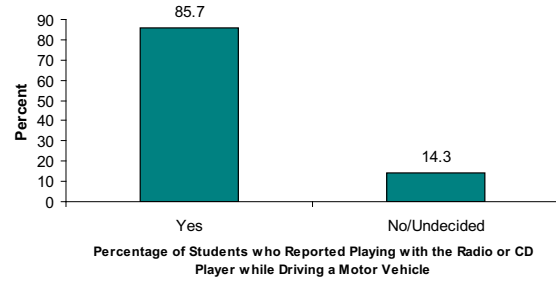
Pre-Test	Post-Test		
	Percentage of Students Reported Playing With the Radio or CD Player While Driving a Motor Vehicle in the Future		
	Yes	No/Undecided	Total
Percentage of Students Reported Playing With the Radio or CD Player While Driving a Motor Vehicle	85.7% (n=54)	14.3% (n=9)	100% (n=63)

Table 9: Changes in Intended Future Behaviour of Playing with Radio or CD Player While Driving a Motor Vehicle

Data Notes: Excluded don't know from pre-test; included undecided in post-test. Very likely and likely were collapsed and undecided, unlikely and very unlikely were collapsed to increase cell count. Missing data was excluded.

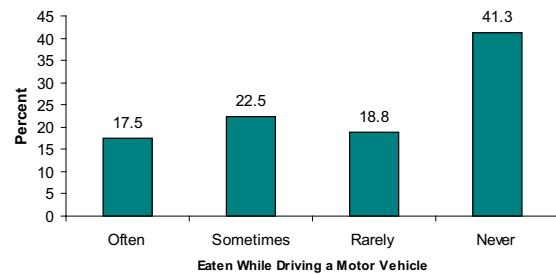
Cautionary note: Cell counts less than five in some cells may inflate the Chi-Square (not shown here). The continuity correction was used to test the null hypothesis.

* p<0.05



Secondly, students were asked if they eat while driving a motor vehicle. Of the proportion of students who reported driving a motor vehicle in the past 12 months, 60.1% (n=48) reported that they do not eat (rarely, never) when driving a motor vehicle, while 40% (n=32) did (often, sometimes) (see Figure 18).

Figure 18: Eating While Driving a Motor Vehicle



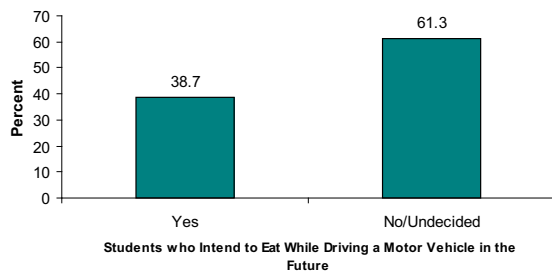
As shown in Table 10, there was a statistically significant difference between current behaviour and future behavioural intentions of eating while driving a motor vehicle, $\chi^2_{h, corr} (1, N=76) = 5.21, p = .022$. Overall, of the 31 students who reported eating while driving a motor vehicle, 61.3% (n=19) reported that they would change their future behaviour and not eat while driving a motor vehicle.

“Every student in grade 11 should attend this program”.

Pre-Test	Post-Test		
	Percentage of Students who Intend to Eat While Driving a Motor Vehicle in the Future		
	Yes	No/ Undecided	Total
Percentage of Students Who Reported Eating while Driving a Motor Vehicle	38.7% (n=12)	61.3% (n=19)	100% (n=31)

Table 10: Changes in Intended Future Behaviour of Eating While Driving a Motor Vehicle

Data Notes: Excluded don't know from pre-test; included undecided in post-test. Very likely and likely were collapsed and undecided, unlikely and very unlikely were collapsed to increase cell count. Missing data was excluded.
 Cautionary note: Cell counts less than five in some cells may inflate the Chi-Square (not shown here). The continuity correction was used to test the null hypothesis.
 * p<0.05

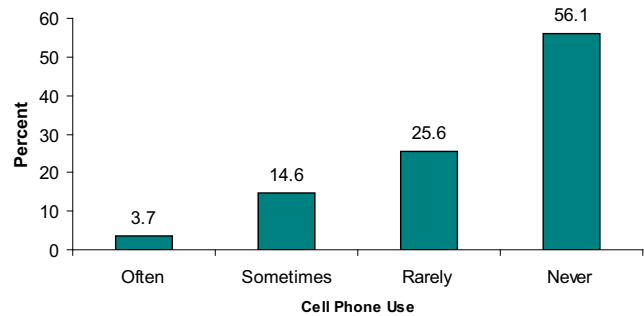


Students were asked if they used cell phones (including hands-free use) while driving a motor vehicle. Of the proportion of students who reported driving a motor vehicle in the past 12 months, 81.7% (n=67) reported that they do not use a cell phone (rarely, never) while driving a motor vehicle, while 18.3% (n=15) did (see Figure 19). This question can be influenced by the proportion of students in the sample who own cell phones. There was no statistically significant difference between current cell phone use and future behaviour intentions.

"[I liked] how realistic it was. The truth was told through real people and real situations".

"Thank-you. You've helped my decision making. Well thought out. I'll think twice now".

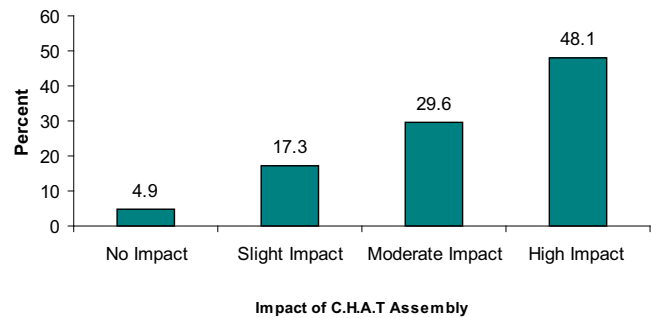
Figure 19: Cell Phone Use While Driving a Motor Vehicle



7.0 Program Effectiveness

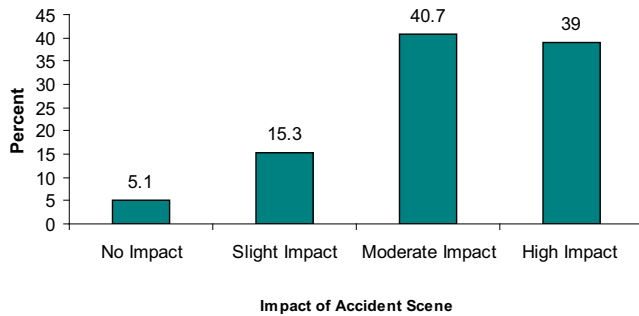
During the post-test, students were asked if they attended the C.H.A.T assembly at their school. Overall, 85.4% (n=82) attended while 14.6% (n=14) did not. Of the students who attended the C.H.A.T assembly, a high proportion rated it as having either a moderate or high impact (77.7%), (n=63) (see Figure 20).

Figure 20: Impact of C.H.A.T Assembly



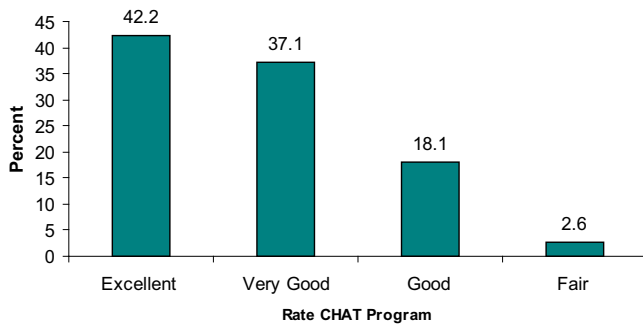
Students were also asked to rate the impact of the trauma scene in the emergency department. Overall, a high percentage rated the trauma scene as having either a moderate or high impact (79.7% n=94) (see Figure 21).

Figure 21: Impact of a Trauma Scene



Students were also asked to rate the C.H.A.T program. Overall, 97.4% (n=92) rated it excellent to good.

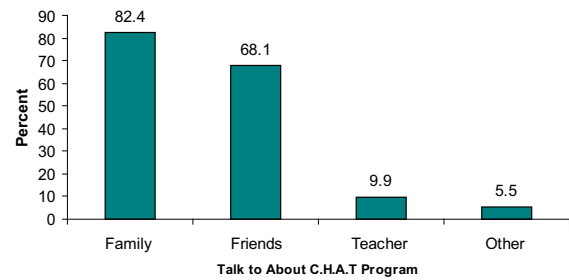
Figure 22: Rate C.H.A.T Program



Students were also asked if they were going to talk to someone about the program. Overall, 75.6% (n=93) reported that they would talk to someone about the program (see Figure 23). Of the proportion of students who reported that they were going to talk to someone about the program, the highest proportion were going to talk to family (82.4%), (n=75), followed by 68.1% (n=62) who were going to talk to friends.



Figure 23: Talk to About C.H.A.T Program



8.0 Qualitative Responses

Overall, as a result of the C.H.A.T program, there has been a positive shift in anticipated future drinking behaviour from pre-test to post-test. Students were asked which part of the day affected them the most. A high proportion of students reported that the trauma scene at the emergency department and the speakers who shared their personal stories affected them the most. Students were then asked to describe their impressions of the day in one sentence. A high proportion of responses made reference to the fact that the day had a positive impact on their lives. Students were then asked what they liked about the day. A high proportion of participants reported that they liked the entire day, speakers, emergency department and trauma scene. Students were then asked what they did not like about the day. The majority of students reported that they did not like the graphic nature of the program. Some students also reported that they felt the day was boring, while others felt there was nothing that they did not like about the program. Students were also asked how the program made them feel. Overall, the students felt sad, scared and had a heightened awareness of the negative consequences of unhealthy risk-taking behaviours. Overall, the students praised the program and were thankful that they had the opportunity to attend.



9.0 Summary

This pre-test, post-test study design was intended to determine if the C.H.A.T program was operating as it was intended to in changing attitudes, knowledge and future behavioural intentions about the consequences of alcohol/drug and other risk-taking behaviours in order to prevent unintentional injuries. The underlying assumption is that future behavioural intentions are affected by attitudes and knowledge. Therefore, the primary objective of this process evaluation was to determine the impact of the C.H.A.T program. The elements of the C.H.A.T program that were studied included: alcohol use, driving after drinking and substance use, seatbelt use, driving and safety, distractions and program effectiveness. The evaluation can be used to determine whether the C.H.A.T program is changing future behaviour and can also assist program planners in future injury prevention programming. Moreover, the evaluation can be used as a model for other C.H.A.T programs.

The objectives of the study were:

1. To determine current alcohol, drug and other risk-taking behaviours (alcohol use, driving after drinking and substance use, seatbelt use, driving and safety and distractions), with the underlying assumption that current behaviour is affected by attitudes and knowledge.
2. To determine changes in future alcohol, drug and other risk taking behavioural intentions (alcohol use, driving after drinking and substance use, seatbelt use, driving and safety and distractions) with the underlying assumption that current behaviour is affected by attitudes and knowledge.
3. To determine students' perspectives of the C.H.A.T program.

Students were confronted with real-life examples of unintentional injuries related to drinking and driving and were also exposed to the long-term emotional, physical and psychological consequences of risk-taking behaviour. The results of the study demonstrate that the C.H.A.T program was successful in that it did show some positive shift in future behavioural intentions. Therefore, the C.H.A.T program was operating as intended, thereby meeting its goals and objectives.

Objective 1: To determine current alcohol, drug and other risk-taking behaviours (alcohol use, driving after drinking and substance use, seatbelt use, driving and safety and distractions), with the underlying assumption that current behaviour is affected by attitudes and knowledge.

Alcohol Use

Overall, more than two thirds of students reported drinking alcohol in the past 12 months and of the proportion who reported consuming alcohol in the past four weeks, a higher proportion reported drinking once or twice each week. Over 80% of students who reported drinking alcohol in the past four weeks reported binge drinking.

Driving After Drinking and Substance Abuse

Less than one third of students reported drinking and driving. Slightly over half the students reported using marijuana or hashish in the past 12 months, and of those, less than half reported that they had driven within one hour of using marijuana or hashish.

Less than half of students reported being a passenger with a drunk driver. Students were also asked if they would try to prevent this person from driving, and less than half reported having done so in the past. Of that proportion, they were most likely to drive him/her home themselves.

Over half the participants reported that they have arranged to have a designated driver, and of that proportion, they were most likely to make that arrangement always or most of the time.

Seatbelt Use

Overall, a higher percentage of students reported fastening their seatbelts when driving and while being a front passenger, while a lower proportion fastened their seatbelts while being backseat passengers and insisted that all the passengers have their seatbelts fastened and children are in the car seats.

Driving and Safety

Overall, a higher percentage of students reported that they would drive a motor vehicle when they were feeling tired and were less likely to drive a motor vehicle with two teenagers present and with passengers when they were feeling tired. Students who reported driving a motor vehicle in the past 12 months reported driving the same speed compared to other drivers. They reported their driving behaviour in terms of aggressive driving was about the same as other drivers.

Distractions

Overall, a higher percentage of students played with the radio or CD player, while a lower percentage of students reported eating while driving a motor vehicle and using a cell phone.

Objective 2: To determine changes in future alcohol, drug and other risk-taking behavioural intentions (alcohol use, driving after drinking and substance use, seatbelt use, driving and safety and distractions) with the underlying assumption that current behaviour is affected by attitudes and knowledge.

Significant differences were found among drinking behaviour (alcohol consumption in the past 12 months

and four weeks), substance use (marijuana or hashish), seatbelt use (back passenger, insisting that all passengers fasten their seat belts and children are in car seats), driving and safety (driving tired, driving passengers when feeling tired, driving a motor vehicle with two or more teenagers present), driving distractions (playing with CD player and eating), and driving speed, aggressive driving (see Table 11, 12, 13, 14).

Table 11: Summary Table of Significant Differences For Pre and Post Test

Pre-Test	Post-Test		
	Yes	No/Undecided	Total
Percentage of Students who Reported Consuming Alcohol in the Past 12 Months, intend to Consume Alcohol in the Next 12 Months	57.6% (n=53)	42.4% (n=39)	100% (n=92)
Percentage of Students who Reported Consuming Alcohol in the Past Four Weeks, will Continue to do so in the Next Four Weeks	87.3% (n=48)	12.7% (n=7)	100% (n=55)
Percentage of Students who Reported using Marijuana or Hashish in the Past 12 Months, will continue to do so in the future	48.1% (n=26)	51.9% (n=28)	100% (n=54)
Percentage of Students who Rarely or Never Fasten their Seatbelt when they are a Back Passenger will wear their seatbelt in the future.	70.6% (n=12)	29.4% (n=5)	100% (n=17)
Percentage of Students who Sometimes, Rarely, or Never Insist that all Passengers have their Seatbelts Fastened and Children are in Car Seats intend to change their behaviour.	70.0% (n=14)	30.0% (n=6)	100% (n=20)
Percentage of Students who Drive Passengers when Feeling Tired will Continue to do so in the Future.	46.2% (n=12)	53.3% (n=14)	100% (n=26)
Percentage of Students who Drive Passengers when they are Feeling Tired will Continue to do so in the Future	54.5% (n=12)	45.5% (n=10)	100% (n=22)
Percentage of Students who Drive a Motor Vehicle with More than Two Teenagers and No Adult Present will continue to do so in the Future	87.5% (n=21)	12.5% (n=3)	100% (n=24)
Percentage of Students who Reported Playing with a radio of CD Player while Driving a Motor Vehicle will continue to do so in the future	85.7% (n=54)	14.3% (n=9)	100% (n=63)
Percentage of students who Eat while Driving a Motor Vehicle will Continue to do so in the Future.	38.7% (n=12)	61.3% (n=19)	100% (n=31)

Data Notes: Excluded don't know from pre-test; included undecided in post-test.

Cautionary note: Cell counts less than five in some cells may inflate the Chi-Square (not shown here).

* $p < 0.05$ (see tables in report)

Table 12: Summary Driving Speed Behaviour

Pre-Test Current Driving Behaviour	Post-Test			
	Faster	Slower	Same	Total
Drive Faster	31.6% (n=6)	15.8% (n=3)	52.6% (n=10)	100% (n=19)

Data Notes: Excluded don't know from pre-test; included undecided in post-test.

Cautionary Note: Cell counts less than five in some cells, may inflate the Chi-Square (not shown here).

* p<0.05

Table 13: Summary of Aggressive Driving Behaviour

Pre-Test Current Driving Behaviour	Post-Test			
	Aggressive	Not Aggressive	Same	Total
Drive Aggressively	46.2% (n=6)	23.1% (n=3)	30.8% (n=4)	100% (n=13)

Data Notes: Excluded don't know from pre-test; included undecided in post-test.

Cautionary note: Cell counts less than five in some cells may inflate the Chi-Square (not shown here).

* p<0.05

Table 14: Summary of Significant Impact

	Yes	No
Intentions to Drink Alcohol in the Next 12 Months	✓	
Intentions to Drink Alcohol in the Next Four Weeks	✓	
Intentions to Binge Drink in the Next Four Weeks		✓
Future Intentions to Drink and Drive		✓
Future Intentions to use Marijuana or Hashish	✓	
Future Intentions to Drive a Motor Vehicle Within 1 Hour of Using Marijuana or Hashish		✓
Future Intentions to being a Passenger with a Driver who had Two or More Drinks in the Hour Before Driving		✓
Future Intentions to Try to Prevent Someone from Drinking and Driving		✓
Future Intentions to Arrange to Have a Designated Driver		✓
Future Intentions of Wearing a Seat Belt when Driving a Motor Vehicle or While Being a Front Passenger		✓
Future Intentions of Wearing a Seat Belt when being a Back Passenger	✓	
Future Intentions when driving a car that all passengers have their seat belts fastened and that all young children are in their car seats	✓	
Future Intentions to Drive a Motor Vehicle when you are Feeling tired	✓	
Future Intentions to Drive a Motor Vehicle with Passengers when you are Feeling Tired	✓	
Driving Aggressively	✓	
Driving Speed	✓	
Future Intention to Drive a Motor Vehicle with Two Teenagers and no Adult Present	✓	
Future Intentions to Play a Radio or CD Player while Driving a Motor Vehicle	✓	
Future Intentions to Eat while Driving a Motor Vehicle	✓	
Future Intentions to Use a Cell Phone While Driving a Motor Vehicle		✓

Objective 3: To determine students' perspectives of the C.H.A.T program

The third study objective was to determine if the C.H.A.T program was effective. Overall, it was found that the program was effective. A high proportion of students reported that the C.H.A.T assembly and trauma scene had a high impact and rated the overall C.H.A.T program as excellent. A high proportion of students reported that they would talk to someone about the program, particularly their family. Students also reported that they liked the entire day, speakers, emergency department and the mock trauma scene. The day also made the students feel sad and scared, and they gained more awareness of the negative consequences of unhealthy risk-taking behaviours. A majority of students praised the program and were thankful they had the opportunity to attend. However, some students felt the program was boring and graphic.

Overall, although there are some limitations to this study, the results provide some information about current and future risk-taking behavioural intentions, as well as the impact of the program. This study can be used as a benchmark for future research for the C.H.A.T program and other fear appeal health promotion approaches.

10.0 Recommendations

1. To provide key stakeholders with useful information for the purpose of program planning.
2. To continue to offer the C.H.A.T Program at the Norfolk General Hospital.
3. To modify the existing C.H.A.T Program based on the results of the evaluation.
4. To conduct further research that would allow for a more favourable research design.

"Very good program. I'd recommend it to all high school students and not just a few from each school".

"[The program made me feel] sorry for the people that had an accident but confident that I will try to always take security measures".



"When Harold told his story is what impacted me the most cause I realized how truly sad life could be if I made a wrong choice. The consequences to your actions can be large".



Appendix 1 - C.H.A.T. Survey Part 1

Communities and Hospitals Against Trauma Survey (C.H.A.T.S.)

You Have Been Chosen to Participate in a Survey

The Haldimand-Norfolk Health Unit and Norfolk General Hospital are conducting this survey. This survey focuses on risk taking behaviours. Your input has been requested in this important opportunity to help us understand how you make choices everyday. You will be asked to fill out a questionnaire at the beginning of the day and one at the end of the day.

The survey will take about 10 minutes to complete. You will be asked questions about:

1. Your Background
2. Alcohol Use
3. Driving after Drinking and Substance Use
4. Seat Belt Use
5. Driving and Safety
6. Distractions
7. Program Evaluation (Only asked in the second survey)

When you have completed the survey, please give it to Joanne Alessi (Public Health Nurse). If you have any questions please address them to Joanne in person. Joanne can also be reached at (905) 318-5367 Ext. 322, if you have any further questions.

Your individual information will remain confidential and anonymous. Please do not put your name on the survey. No individual information will be reported.

A summary of the results will be available on the Haldimand-Norfolk Health Unit website www.haldimand-norfolk.org/health/publications.htm by December 2006. Your participation is strictly voluntary so you can stop at any time. You can refuse to answer any questions. Completion of this survey will serve as consent to be part of the overall study.

Thank you for your participation.

Communities and Hospitals Against Trauma Survey (C.H.A.T.S.)

Instructions for Completing this Questionnaire

Most questions are followed by a list of answers. Please choose the answer that is right for you and indicate your choice in one of the boxes below. Please answer each question honestly.

Example:

1. What is your favourite colour?

- Red
- Green
- Blue
- Orange
- Yellow



C.H.A.T. Survey Part 1

The First Section is about your Background

1. What is your date of birth?
_____ (yy/mm/dd)
2. Are you male or female?
 - Male
 - Female
3. What grade are you in?
 - Grade 9
 - Grade 10
 - Grade 11
 - Grade 12
4. In the **LAST 12 MONTHS**, have you ever driven a motor vehicle. (*By motor vehicle, we mean a car, truck, or van?*)
 - Yes
 - No
 - Don't know
 - Refuse

The Next Section is about Alcohol Use

Alcohol can be any drinks such as beer, wine, or liquor (rum, whiskey, vodka etc.) or any drink that has alcohol such as coolers or other mixed drinks.

5. In your **LIFETIME** have you drunk alcohol (more than a sip of alcohol)?
 - Yes
 - No
6. In the **LAST 12 MONTHS** did you drink alcohol (more than a sip of alcohol)?
 - I don't drink alcohol
 - Yes
 - No
 - Don't know
 - Refuse
7. During the **LAST 4 WEEKS**, how often did you drink alcohol? (**Please check ONE**)
 - I don't drink alcohol
 - Once or twice
 - Once or twice each week
 - 3 or 4 times each week
 - 5 or 6 times each week
 - Once each day
 - More than once each day
 - Did not drink alcohol in the last 4 weeks
 - Don't know
 - Refuse

8. How many times in the **LAST 4 WEEKS** have you had **5 OR MORE DRINKS** of alcohol on the **SAME OCCASION?** (Please check ONE)

- I don't drink alcohol
- Once
- Twice
- 3 times
- 4 times
- 5 or more times
- Did not have any alcohol in the last 4 weeks
- Did not have 5 or more drinks on the same occasion
- Don't know
- Refuse

The Next Section is about Driving After Drinking and Substance Abuse

9. How often in the **LAST 12 MONTHS** have you driven within 1 hour of drinking two or more drinks of alcohol? (Please check ONE)

- I have never driven a motor vehicle
- I don't drink alcohol
- Never
- Once
- Twice
- 3 times
- 4 times
- 5 times
- 6 times
- 7 times
- 8 or more times
- Don't know
- Refuse

10. How often in the **LAST 12 MONTHS**, have you ever used marijuana or hashish?

- Yes —————> If Yes, how often in the **LAST 12 MONTHS** have you driven within 1 hour of using marijuana or hashish? (Please check ONE)
- No
- Don't know
- Refuse
- I have never driven a motor vehicle
- Never
- Once
- Twice
- 3 times
- 4 times
- 5 times
- 6 times
- 7 times
- 8 or more times
- Don't know
- Refuse

11. In the **LAST 12 MONTHS** have you been a passenger with a driver who had 2 or more drinks in the hour before driving a motor vehicle?

(Please check ONE)

- Yes
- No
- Don't know
- Refuse

12. On the **MOST RECENT OCCASION** did you try to prevent this person from driving?

- Never been in this situation
- Yes —————> If Yes, what did you do? (Please check ONE)
- No
- Don't know
- Refuse
- Drove him/her home yourself
- Asked someone to drive him/her home
- Asked him/her to take a taxi
- Hid his/her car keys
- Served coffee
- Kept the person at home
- Other
- Don't know
- Refuse

13. Do you ever go out with friends or family where you will be consuming alcohol?

- I don't drink alcohol
- Yes
- No
- Don't know
- Refuse

14. When people go out, one person can agree ahead of time to be the **DESIGNATED DRIVER** and not drink any alcohol in order to drive the group home safely.

When you go out with friends, do you arrange to have a **DESIGNATED DRIVER**?

- | | | |
|-------------------------------------|---|---|
| <input type="checkbox"/> Yes | → | How often do you make this arrangement? |
| <input type="checkbox"/> No | | (Please check ONE) |
| <input type="checkbox"/> Don't know | | <input type="checkbox"/> Always |
| <input type="checkbox"/> Refuse | | <input type="checkbox"/> Most of the time |
| | | <input type="checkbox"/> Sometimes |
| | | <input type="checkbox"/> Rarely or Never |
| | | <input type="checkbox"/> Don't know |
| | | <input type="checkbox"/> Refuse |

The Next Section is about Seat Belt Use

15. How often do you fasten your seatbelt when **YOU DRIVE** a motor vehicle? (Please check ONE)

- I have never driven a motor vehicle
- Always
- Most of the time
- Rarely
- Never
- Don't know
- Refuse

16. When you are a **FRONT PASSENGER**, how often do you fasten your seatbelt? (Please check ONE)

- Do not ride in the front seat
- Always
- Most of the Time
- Rarely
- Never
- Don't know
- Refuse

17. When you are a **BACK PASSENGER**, how often do you fasten your seatbelt? (Please check ONE)

- Do not ride in the back seat
- Always
- Most of the time
- Rarely
- Never
- Don't know
- Refuse

18. How often, when you are driving a car, do you insist that all the passengers with you have their seat belts fastened and that all young children are in car seats? (Please check ONE)

- I have never driven a motor vehicle
- Always
- Most of the time
- Sometimes
- Rarely
- Never
- Don't know
- Refuse

The Next Section is about Driving and Safety

19. How often did you drive a motor vehicle when you were feeling tired? (Please check ONE)

- I have never driven a motor vehicle
- Often
- Sometimes
- Rarely
- Never
- Don't know
- Refuse

20. How often do you drive a motor vehicle with passengers when you are feeling tired? (Please check ONE)

- I have never driven a motor vehicle
- Often
- Sometimes
- Rarely
- Never
- Don't know
- Refuse

21. Compared to other drivers, would you usually say you drive.....? **(Please check ONE)**

- I have never driven a motor vehicle
- Much faster
- A little faster
- About the same speed
- A little slower
- Much slower
- Don't know
- Refuse

22. Compared to other drivers, would you say you usually drive.....? **(Please check ONE)**

- I have never driven a motor vehicle
- Much more aggressively
- A little more aggressively
- About the same
- A little less aggressively
- Much less aggressively
- Don't know
- Refuse

23. How often do you drive a motor vehicle with more than two teenagers and no adult present? (*Adult means over the age of 21*) **(Please check ONE)**

- I have never driven a motor vehicle
- Often
- Sometimes
- Rarely
- Never
- Don't know
- Refuse

25. How often have you played with the radio or CD player while driving a motor vehicle? **(Please check ONE)**

- I have never driven a motor vehicle
- Often
- Sometimes
- Rarely
- Never
- Don't know
- Refuse

26. How often have you eaten while driving a motor vehicle? **(Please check ONE)**

- I have never driven a motor vehicle
- Often
- Sometimes
- Rarely
- Never
- Don't know
- Refuse

27. Counting hands-free use, how often do you use a cell phone while you are driving a motor vehicle? **(Please check ONE)**

- I have never driven a motor vehicle
- Often
- Sometimes
- Rarely
- Never
- Don't know
- Refuse

The Next Section is about Distractions

Thank you for your participation.

24. How often have you groomed yourself (combed your hair and/or applied makeup) while driving a car or other vehicle? **(Please check ONE)**

- I have never driven a motor vehicle
- Often
- Sometimes
- Rarely
- Never
- Don't know
- Refuse

Appendix 2 - C.H.A.T. Survey Part 2

Communities and Hospitals Against Trauma Survey (C.H.A.T.S.)**Instructions for Completing this Questionnaire**

Most questions are followed by a list of answers. Please choose the answer that is right for you and indicate your choice in one of the boxes on the left. Please answer each question honestly.

Example:

1. What is your favourite colour?

- Red
 Green
 Blue
 Orange
 Yellow

**C.H.A.T. Survey Part 2****This First Section is about Your Background**

1. What is your date of birth?
_____ (yy/mm/dd)
2. Are you male or female?
 Male
 Female
3. What grade are you in?
 Grade 9
 Grade 10
 Grade 11
 Grade 12

The Next Section is about Program Evaluation

4. Did you attend the Communities and Hospitals Against Trauma (C.H.A.T.) assembly at your school?
 Yes
 No
 Don't know
 Refuse
5. How would you rate the impact of the C.H.A.T. assembly?
 I did not attend
 No impact
 Slight impact
 Moderate impact
 High impact
 Don't know
 Refuse
6. How would you rate the impact of the accident scene in the Emergency Department?
 No impact
 Slight impact
 Moderate impact
 High impact
 Don't know
 Refuse

7. What part of the day affected you the most?
Why?

8. Describe your impression of the day in one sentence.

9. What did you like about today?

10. What did you not like about today?

11. How did the program make you feel?

12. Overall, how would you rate the program?

- Excellent
- Very good
- Good
- Fair
- Poor
- Don't know
- Refuse

13. Are you going to talk to someone about this program?

- Yes
 - No
 - Don't know
 - Refuse
- > If Yes, who will you talk to?
- Family
 - Friends
 - Teacher
 - Other _____
 - Don't know
 - Refuse

The Next Section is about Alcohol Use

Alcohol can be any drinks such as beer, wine, or liquor (rum, whiskey, vodka etc.) or any drink that has alcohol such as coolers or other mixed drinks.

14. As a result of the program in the **NEXT 12 MONTHS** how likely are you to drink alcohol? (**Please check ONE**)

- Very likely
- Likely
- Undecided
- Unlikely
- Very unlikely
- Refuse

15. As a result of the program, in the **NEXT 4 WEEKS**, how often are you likely to drink alcohol? (**Please check ONE**)

- Once or twice
- Once or twice each week
- 3 or 4 times each week
- 5 or 6 times each week
- Once each week
- More than once each day
- Will not drink alcohol in the next month
- Undecided
- Refuse

16. As a result of the program, in the **NEXT 4 WEEKS**, how likely are you to have **5 OR MORE DRINKS** of alcohol on the **SAME OCCASION**? **(Please check ONE)**

- Very likely
- Likely
- Undecided
- Unlikely
- Very unlikely
- Refuse

The Next Section is about Driving after Drinking and Substance Use

17. As a result of the program, how likely are you to drive a motor vehicle within 1 hour of drinking 2 or more drinks of alcohol? **(Please check ONE)**

- Very likely
- Likely
- Undecided
- Unlikely
- Very unlikely
- Refuse

18. As a result of the program, how likely are you to use marijuana or hashish? **(Please check ONE)**

- | | | | |
|---|---|---|---|
| <ul style="list-style-type: none"> <input type="checkbox"/> Very <input type="checkbox"/> Likely <input type="checkbox"/> Undecided <input type="checkbox"/> Unlikely <input type="checkbox"/> Very unlikely <input type="checkbox"/> Don't know <input type="checkbox"/> Refuse | } | → | <p>How likely are you to drive a motor vehicle within 1 hour of using marijuana or hashish?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Very likely <input type="checkbox"/> Likely <input type="checkbox"/> Undecided <input type="checkbox"/> Unlikely <input type="checkbox"/> Very unlikely <input type="checkbox"/> Refuse |
|---|---|---|---|

19. As a result of the program, how likely are you to be a passenger with a driver who had 2 or more drinks in the hour before driving? **(Please check ONE)**

- Very likely
- Likely
- Undecided
- Unlikely
- Very unlikely
- Refuse

20. As a result of this program, how likely are you to try to prevent someone who has had 2 or more drinks in the hour from driving a motor vehicle? **(Please check ONE)**

- | | | | |
|--|---|---|---|
| <ul style="list-style-type: none"> <input type="checkbox"/> Very <input type="checkbox"/> Likely <input type="checkbox"/> Undecided <input type="checkbox"/> Very unlikely <input type="checkbox"/> Unlikely <input type="checkbox"/> Refuse | } | → | <p>What would you likely do? (Please check ONE)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Drive him/her home yourself <input type="checkbox"/> Ask someone to drive him/her home <input type="checkbox"/> Ask him/her to take a taxi <input type="checkbox"/> Hide his/her car keys <input type="checkbox"/> Serve coffee <input type="checkbox"/> Keep the person at home <input type="checkbox"/> Other _____ <input type="checkbox"/> Don't know <input type="checkbox"/> Refuse |
|--|---|---|---|

21. As a result of this program, if you go out with friends and family where you will be consuming alcohol, how willing are you to arrange to have a **DESIGNATED DRIVER**? (*A designated driver is someone who does not drink any alcohol in order to drive the group home safely.*)

- | | | | |
|--|---|---|---|
| <ul style="list-style-type: none"> <input type="checkbox"/> Not willing <input type="checkbox"/> Somewhat willing <input type="checkbox"/> Undecided <input type="checkbox"/> Moderately willing <input type="checkbox"/> Very willing <input type="checkbox"/> Refuse | } | → | <p>How often are you likely to make this arrangement? (Please check ONE)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Always <input type="checkbox"/> Most of the time <input type="checkbox"/> Sometimes <input type="checkbox"/> Rarely or Never <input type="checkbox"/> Don't know |
|--|---|---|---|

The Next Section is about Seat Belt Use

22. As a result of this program, how likely are you to fasten your seat belt if you **DRIVE** a motor vehicle? **(Please check ONE)**

- Very likely
- Likely
- Undecided
- Very unlikely
- Unlikely
- Refuse

23. As a result of this program if you are a **FRONT PASSENGER**, how likely are you to fasten your seatbelt? **(Please check ONE)**

- Very likely
- Likely
- Undecided
- Very unlikely
- Unlikely
- Refuse

24. As a result of this program if you are a **BACK PASSENGER**, how likely are you to fasten your seatbelt? **(Please check ONE)**

- Very likely
- Likely
- Undecided
- Very unlikely
- Unlikely
- Refuse

25. As a result of this program, when driving a motor vehicle how likely are you to insist that all the passengers with you have their seat belts fastened and that all young children are in their car seats? **(Please check ONE)**

- Very likely
- Likely
- Undecided
- Very unlikely
- Unlikely
- Refuse

The Next Section is about Driving and Safety

26. As a result of the program, how likely are you to drive a motor vehicle when you are feeling tired? **(Please check ONE)**

- Very likely
- Likely
- Undecided
- Very unlikely
- Unlikely
- Refuse

27. As a result of the program, how likely are you to drive a motor vehicle with passengers when you are feeling tired? **(Please check ONE)**

- Very likely
- Likely
- Undecided
- Very unlikely
- Unlikely
- Refuse

28. As a result of this program, compared to the other drivers would you say you are likely to drive... **(Please check ONE)**

- I have never driven a motor vehicle
- Much more aggressively
- A little more aggressively
- About the same
- A little less aggressively
- Much less aggressively
- Don't know
- Refuse

29. As a result of this program, compared to the other drivers would you say you are likely to drive... **(Please check ONE)**

- I have never driven a motor vehicle
- Much faster
- A little faster
- About the same speed
- A little slower
- Much slower
- Don't know
- Refuse

30. As a result of the program, how likely are you to drive a motor vehicle with more than two teenagers and no adult present? (*Adult means over the age of 21*) **(Please check ONE)**

- Very likely
- Likely
- Undecided
- Very unlikely
- Unlikely
- Refuse

The Next Section is about Distractions

31. As a result of the program, how likely are you to groom yourself (comb your hair and/or apply makeup) while driving a car or other vehicle? **(Please check ONE)**

- Very likely
- Likely
- Undecided
- Very unlikely
- Unlikely
- Refuse

32. As a result of the program, how likely are you to play with the radio or CD player while driving a motor vehicle? **(Please check ONE)**

- Very likely
- Likely
- Undecided
- Very unlikely
- Unlikely
- Refuse

33. As a result of the program, how likely are you to eat while driving a motor vehicle? **(Please check ONE)**

- Very likely
- Likely
- Undecided
- Very unlikely
- Unlikely
- Refuse

34. As a result of the program counting hands-free use, how likely are you to use a cell phone while you are driving a motor vehicle? **(Please check ONE)**

- Very likely
- Likely
- Undecided
- Very unlikely
- Unlikely
- Refuse

Comments:

Thank you for your participation.

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