

# FOCUS ON HealthSTATS



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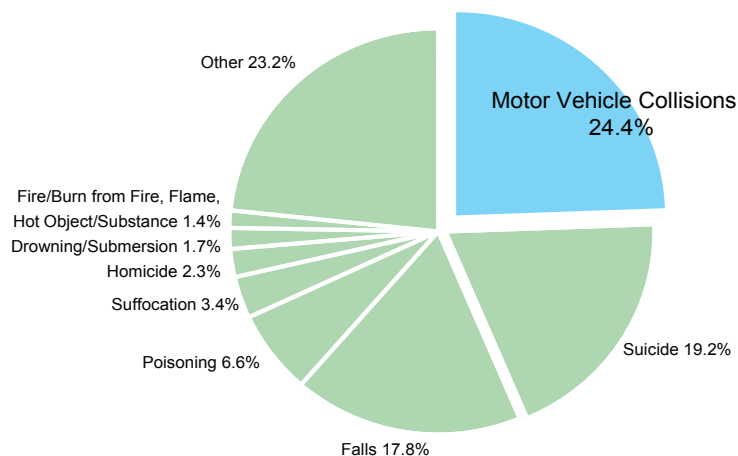
## Road Safety in Simcoe and Muskoka

*Every 30 seconds, someone visits an emergency department in Ontario because of an injury.<sup>1</sup>*

Injuries, and deaths resulting from injuries, come at a tremendous cost—not only in relation to human pain and suffering—but through the direct and indirect financial cost of \$5.7 billion annually across the province.<sup>2</sup> Perhaps most disturbing is the fact that the majority of these injuries and deaths are *predictable* and *preventable*.

One of the most common ways that people are injured or killed is by being involved in motor vehicle collisions (MVCs). MVCs refer to any crashes involving motorized vehicles. This includes traffic collisions, those that occur on public streets and highways, and non-traffic collisions, which occur elsewhere, such as off-road. Collisions can include one or more motor vehicles that result in injury or death to the driver, passengers, pedestrians or those riding bicycles. In Simcoe County and the District of Muskoka, MVCs are the leading cause of injury-related deaths.<sup>3</sup>

## Leading Causes of Injury-Related Deaths Simcoe Muskoka, 2000-2004 combined



Number of Deaths, 2000-2004 combined = 918

Source: Ontario Mortality Data 2000-2004, Provincial Health Planning Database (PHPDB) Extracted July 2007, Ontario Ministry of Health and Long-Term Care.

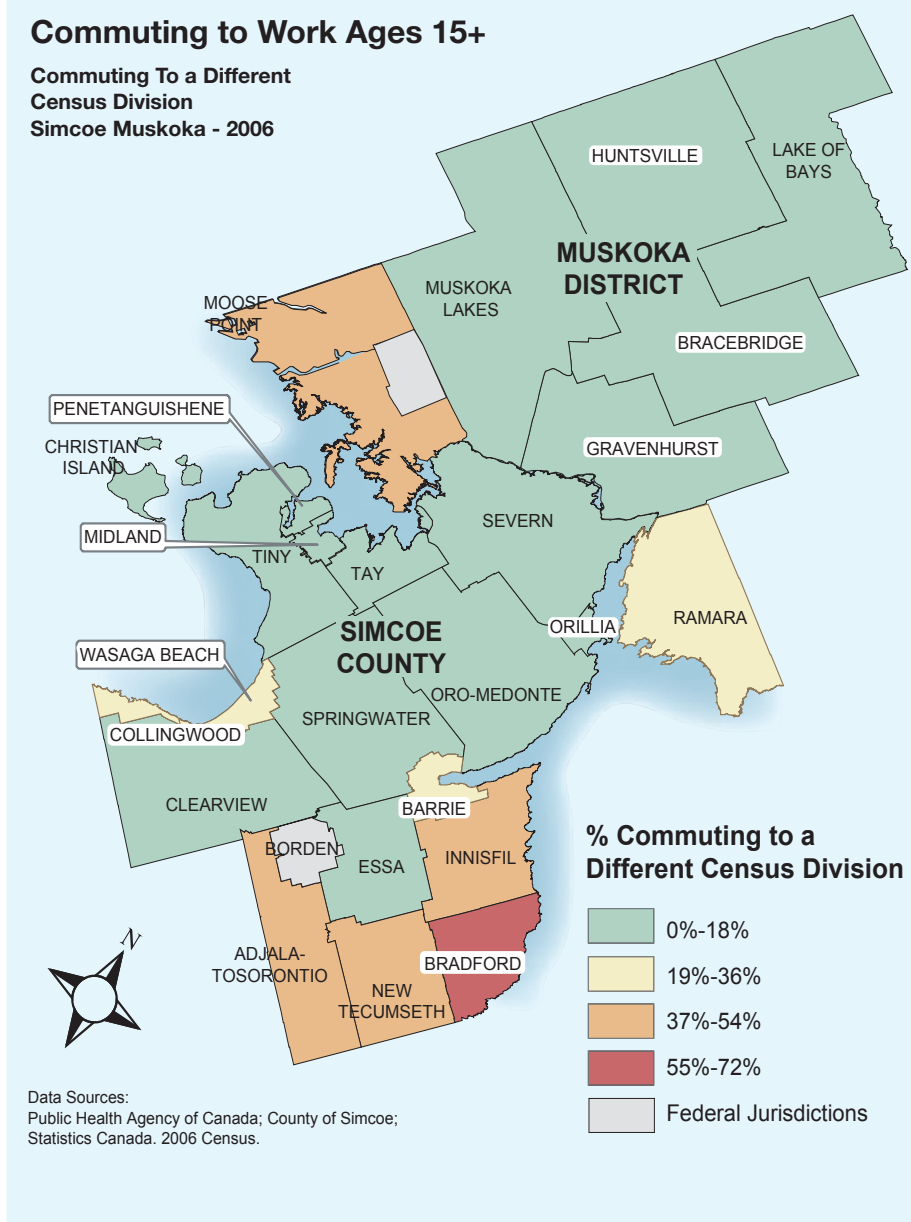
# Travelling in Simcoe and Muskoka

## Simcoe Muskoka—2006

- 479,767 people were living in Simcoe County and the District of Muskoka, the area serviced by Simcoe Muskoka District Health Unit.<sup>4</sup>
- Simcoe Muskoka was growing at twice the rate (11.5%) of the province (6.6%) between 2001 to 2006.<sup>4</sup>
- For every 100 people headed to work—92 drove, six walked or biked and two used public transit.<sup>4</sup>
- More than one-third of people (15 years and older) commuted outside of Simcoe Muskoka to work.<sup>4</sup>
- The south part of Simcoe County had a higher percentage of commuters.<sup>4</sup>
- One-third of all collisions resulting in injury or death occurred on Fridays and Saturdays—a total of 3,484 collisions between 2001 to 2005.<sup>5</sup>
- Twenty per cent of all collisions resulting in injury or death occurred in the months of July and August—a total of 2,041 collisions between 2001 to 2005.<sup>5</sup>

## Commuting to Work Ages 15+

Commuting To a Different  
Census Division  
Simcoe Muskoka - 2006



Whether walking, cycling or driving, people are often sharing the same roads as they get themselves from point A to point B. MVCs can cause injuries that lead to a visit to the emergency room (ER), an admission to hospital or even death.

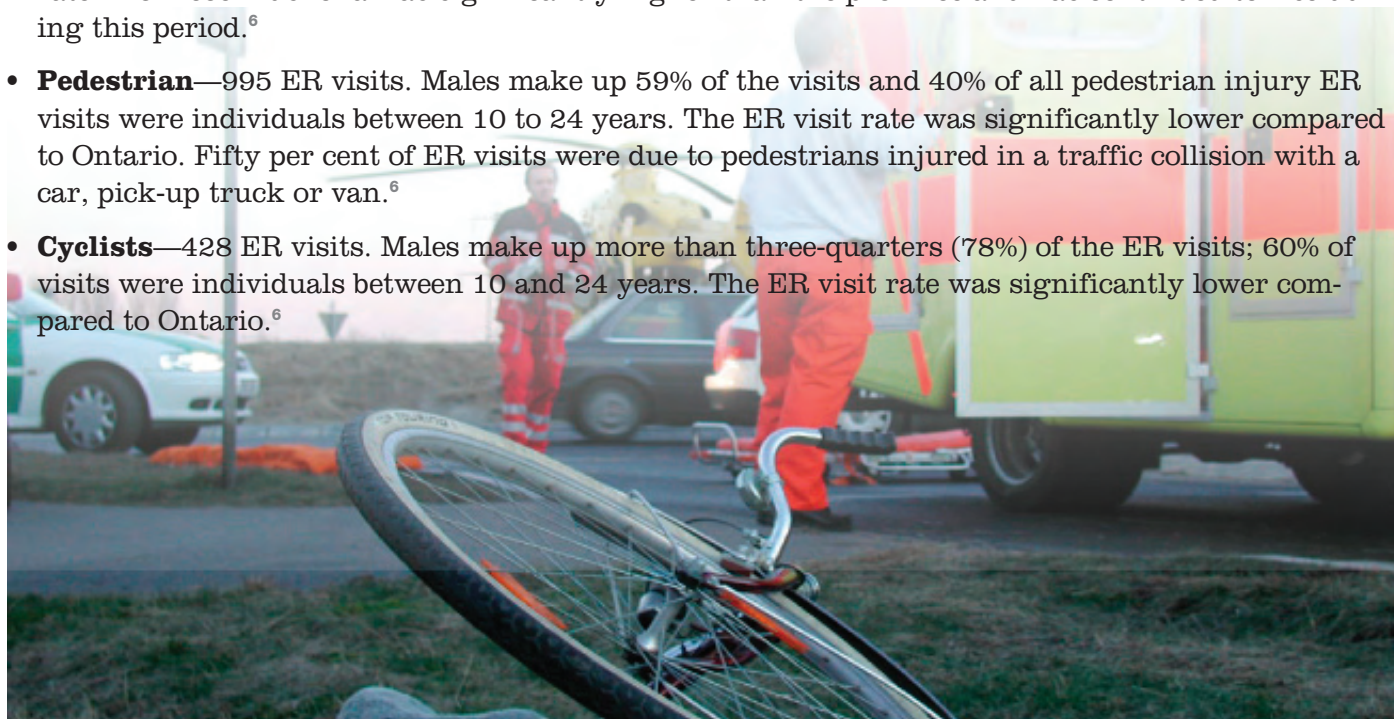
*The Simcoe Muskoka District Health Unit (SMDHU) is committed to reducing the frequency, severity and impact of preventable injury. Public health professionals collaborate with community partners to help create safe and supportive environments where people live, work, play and learn.*

# Emergency Room Visits Due to Motor Vehicle Collisions

During 2007 there were 4,028 ER visits by Simcoe Muskoka residents due to MVC injuries. The 2007 ER visit rate (863 visits per 100,000 population) was down significantly from 2003 (965 visits per 100,000). However this was still higher than the 2007 provincial rate (664 visits per 100,000 population). From 2003 to 2007, almost two-thirds (64%) of these ER visitors were occupants of motor vehicles (excluding motorcycles), 14% were on an ATV or snowmobile, 7% were motorcyclists, 5% were pedestrians and 2% were bicyclists.<sup>6</sup> The mode of transport was not specified for the remainder.

## For 2003 to 2007 combined in Simcoe Muskoka:

- **On-road vehicle (excluding motorcycle)**—13,245 ER visits occurred relatively equally among males and females; 26% (3,451) occurred in residents 15 to 24 years old and 10% (1,280) occurred between 40 to 44 year olds.<sup>6</sup> The ER visit rate in Simcoe Muskoka was significantly higher than the Ontario rate.
- **Off-road vehicles (ATV, snowmobile)**—2,940 ER visits. The number of ATV injuries was nearly double the number of snowmobile injuries and the majority (80%) of the injuries occurred among males. Almost half (44%) of all off-road related ER visits occurred among people ages 10 to 24; 65% were ATV related injuries and 35% were snowmobile related injuries. The ER visit rate in Simcoe Muskoka was more than double the Ontario rate.<sup>6</sup>
- **Motorcycles**—1,487 ER visits. Over two-thirds (85%) of all ER visits occurred among males between the ages of 10 to 24 years. More than half (57%) of ER injury visits was caused from falling or being thrown from the motorcycle, not from a collision with another motor vehicle. The ER visit rate in Simcoe Muskoka was significantly higher than the province and has continued to rise during this period.<sup>6</sup>
- **Pedestrian**—995 ER visits. Males make up 59% of the visits and 40% of all pedestrian injury ER visits were individuals between 10 to 24 years. The ER visit rate was significantly lower compared to Ontario. Fifty per cent of ER visits were due to pedestrians injured in a traffic collision with a car, pick-up truck or van.<sup>6</sup>
- **Cyclists**—428 ER visits. Males make up more than three-quarters (78%) of the ER visits; 60% of visits were individuals between 10 and 24 years. The ER visit rate was significantly lower compared to Ontario.<sup>6</sup>



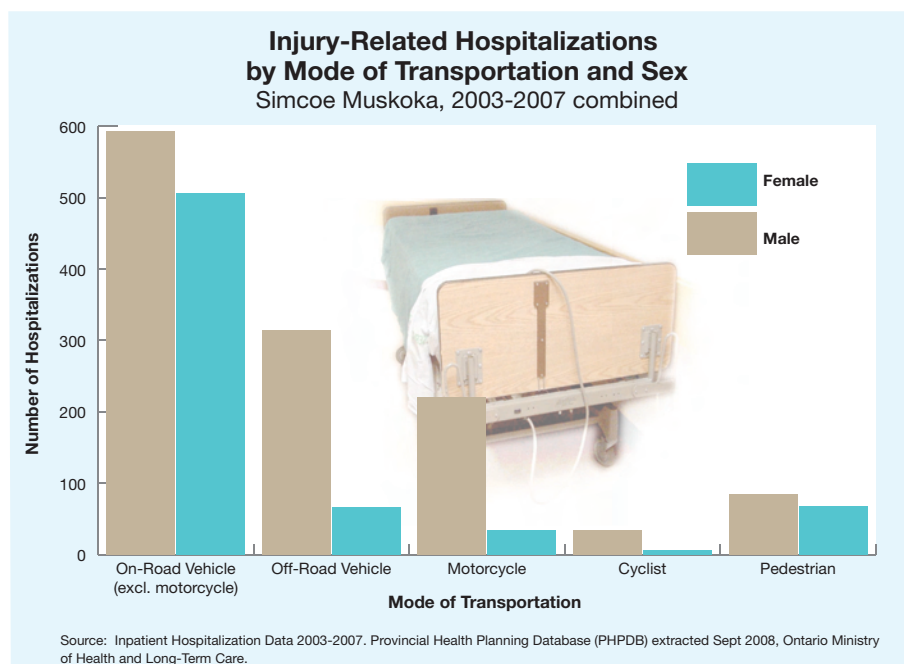


# Hospitalizations Due to Motor Vehicle Collisions

Between 2003 to 2007, there was an average of 404 hospitalizations each year for injuries caused by MVCs. Across all five years, the combined rate of hospitalization (84 per 100,000 population) was significantly higher than the combined provincial rate (56 hospitalizations per 100,000 population). Twenty-one per cent of all hospitalizations occurred among residents 15 to 24 years old and 65% were male. Over half (54%) of these were occupants of a motor vehicle (excluding motorcycles), 19% were on an ATV or snowmobile, 13% were motorcyclists, 8% were pedestrians and 2% were cyclists.<sup>7</sup> The mode of transport was not identified for the remainder.

## For 2003 to 2007 combined in Simcoe Muskoka:

- **On-road motor vehicles (excluding motorcycles)**—1,101 hospitalizations occurred nearly equally among males and females and 20% occurred in 15 to 24 year olds.<sup>8</sup> The Simcoe Muskoka hospitalization rate was significantly higher than the Ontario rate.
- **Off-road vehicles (ATV, snowmobile)**—382 hospitalizations. Fifty-five per cent were ATV-related injuries and 45% were snowmobile related injuries; the majority (83%) were male. More than one-quarter (26%) were between the ages of 15 to 24 years and the hospitalization rate was almost double that of Ontario.<sup>7</sup> ATV related injuries more closely resemble those associated with MVCs than bicycling (e.g. spinal and deep tissue injury).<sup>8</sup>
- **Motorcycles**—255 hospitalizations, of which 221 (87%) occurred among males ages 30 years and older, and very few under the age of 10 or over 70 years. Almost half (45%) of those hospitalized were caused from falling or being thrown from the motorcycle, not from a collision with another vehicle. The Simcoe Muskoka hospitalization rate was significantly higher than Ontario's rate.<sup>7</sup>
- **Pedestrians**—153 hospitalizations. Pedestrian injury hospitalizations occurred almost equally among both sexes as well as across all age groups. Simcoe Muskoka's hospitalization rate was significantly lower than Ontario.<sup>7</sup>
- **Cyclists**—41 hospitalizations. Males account for 85% of hospitalizations; 51% of hospitalizations occurred among children between the ages of one and 19 years. The Simcoe Muskoka rate was similar to the provincial rate.<sup>7</sup>



# Deaths Due to Motor Vehicle Collisions

From 2000 to 2004, 224 Simcoe Muskoka residents died in MVCs. Although the death rate (34%) declined over these years, the combined rate (10 deaths per 100,000 population) was significantly higher than the provincial combined rate

(6.6 deaths per 100,000 population). Nearly half of all deaths were occupants of a motor vehicle, 12% were on ATV or snowmobile, 11% were pedestrians, 5% were motorcyclists and 2% were cyclists. The mode of transport was not identified for the remainder. Although MVCs accounted for 1.3% of all the deaths in Simcoe Muskoka, they accounted for 25% of all the deaths among people younger than 30.<sup>3</sup> More than two-thirds (69%) were male.

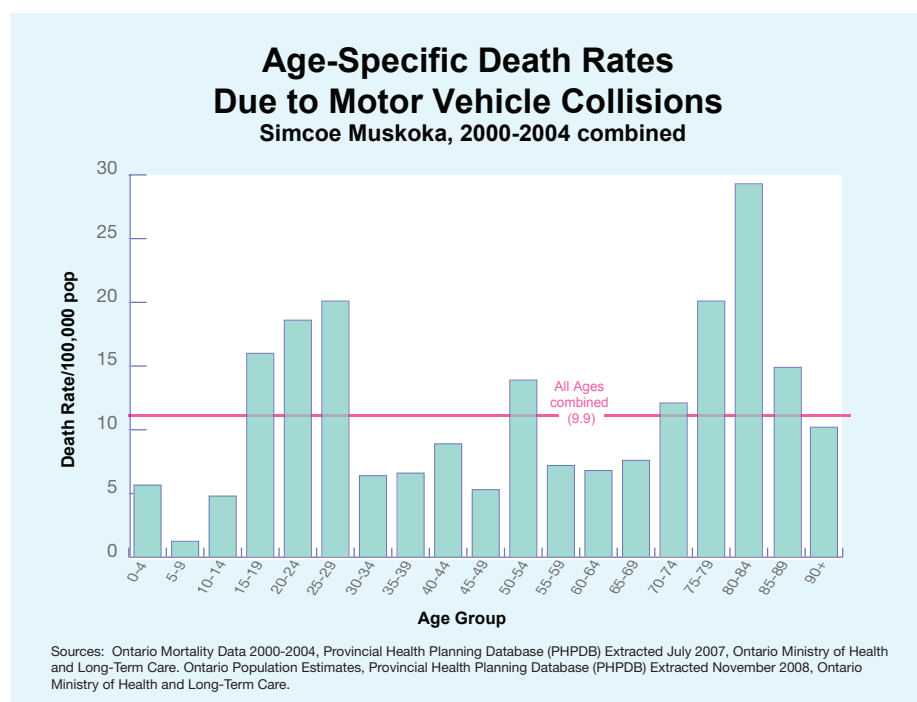
For the years 2000 to 2004 combined, the MVC death rate was high for both young and old age groups, as well as the 50 to 54 year-olds, with rates above the overall Simcoe Muskoka death rate of 9.9 deaths per 100,000 population.<sup>3</sup>



MVCs are the leading cause of death and injury to teens and young adults. The involvement of young drivers (15 to 24 years) in serious road crashes vastly outweighs their representation in the driving population. They account for nearly one-quarter (25%) of motor vehicle deaths and injuries largely due to lack of experience and risk taking behaviour (e.g. seat belt use, speeding, etc) but only 13% of the licensed driving population.<sup>3</sup>

## For 2000 to 2004 combined in Simcoe Muskoka:

- **On-road vehicles (excluding motorcycles)**—64 residents died. Three-quarters (75%) were male and 41% were between the age of 15 to 29 years.<sup>3</sup>
- **Off-road vehicles (ATV, snowmobile)**—26 residents died. The majority (89%) were male and over one-third (38%) of off-road vehicle-related deaths occurred among those between the ages of 15 to 29 years.<sup>3</sup>
- **Motorcycles**—12 residents died. Nearly all deaths were male (92%). Half were between 15 to 29 years old.<sup>3</sup>
- **Pedestrians**—24 pedestrians died. Almost two-thirds (71%) occurred among males. Twelve pedestrians were 65 years or older.<sup>3</sup>
- **Cyclists**—Five residents, all male, died as a result of a collision with a motor vehicle. During the same time period, 91 cyclists died across Ontario.<sup>3</sup>



# Causes of Motor Vehicle Collisions

According to Ontario's Ministry of Transportation, human error is the sole cause in 57% of all crashes and a contributing factor in more than 90% of all crashes.<sup>10</sup> Drinking and driving, drugged driving, speeding, fatigued driving and distracted driving are risk behaviours that contribute to MVCs resulting in injuries, hospitalizations and deaths. The nonuse or misuse of seat belts and child restraints can contribute towards the injuries and deaths sustained from a MVC. In addition, the design and conditions of roads are contributing risk factors.

## Drinking and driving

From 1996 to 2005, the number of people who have died from drinking and driving has gone down 25%. The number of collisions related to drinking and driving has seen an even greater decrease in the range of 25 to 45%.<sup>11</sup>

However, drunk driving is still a leading cause of preventable deaths, injuries and disabilities in Canada and the number one concern reported by Ontarians when it comes to road safety.<sup>12,13</sup> The percentage of drivers who admitted to driving when they thought they were over the legal limit of .08 blood alcohol concentration (BAC) (in the past 12 months) has increased each year since 2004.<sup>13</sup>

Drivers who have been drinking are more likely than the average non-drinking driver to engage in additional dangerous behaviours such as speeding or failing to wear a seat belt. From 2003 to 2005, almost 30% of drinking drivers involved in a fatal crash were also speeding and more than 55% of drinking drivers involved in a fatal crash had failed to buckle up.<sup>14</sup> Changes in attitudes and norms around drinking and using recreational transportation are essential in order to reduce the number and severity of injuries and deaths. In one Ontario study of people hospitalized with severe ATV-related injuries, 26% tested positive for BAC.<sup>15</sup> The rate is similar for snowmobilers admitted to hospital with severe injuries—one in four had been drinking.<sup>16</sup>

The Simcoe Muskoka District Health Unit and their community partners worked with SMARTRISK to conduct research (*Trouble in Paradise*) into the attitudes and behaviours about alcohol and recreational vehicles.<sup>17</sup>



## Reducing drinking and driving on our roads

Anti-drinking and driving measures that the province has enacted since 1996 have had a positive impact and have reduced the incidence of drinking and driving on Ontario's roads. Some of these measures include:

- mandatory use of ignition interlock devices for persons convicted of impaired driving;
- tests of physical co-ordination if the driver is suspected of being impaired;
- immediate impoundment of the vehicles of drivers who fail a breath test;
- more police spot checks.<sup>13,18</sup>

Additional offences to the Highway Traffic Act will be introduced in 2009, specifically targeting drinking and driving.

Check [www.mto.gov.on.ca](http://www.mto.gov.on.ca) for updates.

*Locally the health unit continues to work closely with key stakeholders and communities to support legislative, enforcement and advocacy efforts to make our roads safer. Visit the health unit's website to learn more about the many community initiatives focusing on drinking and driving [www.simcoemuskokahealth.org](http://www.simcoemuskokahealth.org).*

# Causes of Motor Vehicle Collisions

## Drugs and driving

Many drugs affect the ability to safely operate a vehicle. These include over-the-counter and prescription medications as well as illicit drugs. Approximately 10% of drivers reported using drugs while driving, with marijuana being the most commonly reported, particularly among young males.<sup>19</sup> One in six (16%) of Ontario students grades 10 to 12 with a driver's license say they have driven within one hour of using marijuana and 18% had been a passenger in the car with a driver who had been using drugs.<sup>20</sup> Although still a small proportion of drivers, the number of people getting behind the wheel after smoking marijuana has more than doubled in the past 15 years.<sup>12</sup>



## Reducing drugged driving

Provincially, a tough new law Bill C2, allows specially trained and certified officers to assess and test for the presence of drugs as the cause of impairment (in the absence of alcohol), and to lay charges if indicated.

Locally the health unit collaborates with municipalities, police, schools, social services, parents and young people to educate and raise awareness about the facts and myths related to drug misuse.

## Speeding

In 2005, almost half of all motor vehicle-related deaths in Ontario involved drivers who were speeding or lost control of the vehicle. While the number of deaths on Ontario's roads fell in 2005, the number of deaths involving speed or loss of control was on the rise.<sup>13</sup> The risk of dying or suffering serious injury is almost three times greater for people in vehicles crashing at 150 km/hr as compared to vehicles crashing at 100 km/hr (on a highway).<sup>10</sup>

Between 2001 to 2005, 37% of all motor vehicle-related deaths, (or 127 of 347 fatalities) on Simcoe Muskoka roads involved drivers who were speeding or lost control of the vehicle.<sup>5</sup>

## Getting tough on speeders

Provincially, Bill 203 "Safer Roads for a Safer Ontario Act" came into effect September 30, 2007. This legislation includes tough measures for those who choose to race on Ontario's roads, including higher fines, longer suspensions and impounding cars at the roadside.<sup>22</sup>

## Fatigued driving

Impairment doesn't have to be due to a substance, legal or otherwise. Nearly 60% of Ontario drivers (approximately five million) admitted to driving while drowsy or fatigued. Fourteen and a half per cent or 1,280,000, say they actually fell asleep or nodded off while driving at least once in the past year. The total number of Ontario drivers who were involved in at least one crash in the past year due to fatigued or drowsy driving may be as high as 167,000.<sup>21</sup>

This is a serious issue. While most drivers believe they can control and overcome drowsiness or fatigue at the wheel, they use tactics that are of little or no effect.<sup>21</sup> The best decision is to stop and sleep.



# Causes of Motor Vehicle Collisions

## Distracted driving

There are many driving distractions including texting, eating, reading, and disruptive passengers and pets, as well as talking on cell phones. Cell phones distract the driver in two ways. Physical distraction occurs when the driver uses the phone and drives at the same time.



Cognitive distraction occurs when the driver has to divide attention between simultaneous tasks—driving and talking.<sup>23</sup> Whether hand-held or hands-free, using a cell phone while driving takes focus and attention away from the road, making involvement in a collision four times more likely.<sup>24</sup> Research has found that slower reaction times are the main problem.<sup>25</sup>

## Road design

The way our communities are designed is a contributing factor to injuries and deaths from motor vehicle-pedestrian collisions and motor vehicle-cyclist collisions. Road design (sidewalks, roads, bike paths, etc.) and the types of features it contains (speed bumps, crosswalks, streetscape, etc.) affects how often, how far and how fast we drive, traffic volume, and our choice of transportation mode.<sup>26</sup> Decreasing the amount of time we spend in a car can lessen our risk of being involved in a MVC. Designing communities that are less sprawled (leading to fewer vehicle trips) and provide for safer street environments that protect pedestrians and cyclists, can reduce or prevent road-related injuries and fatalities.<sup>25</sup>



## Reducing distracted driving

On October 28, 2008, a proposed bill was introduced to the legislature that would make it illegal for drivers to use a hand-held cell phone, send email or text messages, or use any other hand-held electronic devices while driving. Emergency calls, such as 911, would be exempt. Under the proposed legislation, drivers who continue to text, type, email, dial or chat using a prohibited hand-held device could face fines of up to \$500.

The proposed legislation would bring Ontario in line with similar laws in Quebec, Nova Scotia, Newfoundland and Labrador, several U.S. states and about 50 countries worldwide.<sup>27</sup>

The SMDHU joined the advocacy efforts of others with the Board of Health urging the province to amend the Highway Traffic Act and move forward with legislation to make driving while using a hand-held cell phone illegal. In 2008, SMDHU passed its own policy restricting use of any mobile communication device while driving.

*The SMDHU is working in partnership with municipalities, planners and other key stakeholders to advocate for the design of safer roads and opportunities for people to walk, cycle or use transit.*



# Keeping Safe on Our Roads

## Buckling up saves lives

Motor vehicle collisions are the leading cause of death and serious injury for Canadians of all ages, including children. Many injuries and deaths are directly related to the nonuse or misuse of child restraints.<sup>28</sup> Car seats, when used correctly, reduce the risk of death by 71% and the risk of injury by 67%.<sup>28</sup>

Wearing a seat belt properly dramatically increases the chance of surviving a motor vehicle collision.

Many children are removed from their booster seats before they are ready for the adult seat belt system. A study conducted eight months after the introduction of the booster seat law in Ontario, showed that 68% of Ontario children ages 4 to 8 were restrained in seat belts only.<sup>29</sup> The seat belt alone cannot provide these children the protection needed to make every ride a safe ride.

Despite high levels of compliance with seat belt use by adults (93% for drivers and 91% for passengers)<sup>30</sup> it is important to note that in 2005, 30% of driver fatalities and 25% of passenger fatalities occurring in Simcoe Muskoka revealed that victims were not using seat belts at the time of collision.<sup>5</sup> In addition, 16% of drivers and 25% of passengers suffering serious injuries in a collision were not wearing their seat belts.<sup>5</sup>



"Failing to wear your seat belt while driving makes you about 38 times more likely to be killed in a crash than if you did buckle up."<sup>31</sup>

## Improving seat belt and restraint use

Anyone (not just the child's parent/guardian) in Ontario transporting children is currently required by law to make sure the child is properly adjusted and secured in an infant seat, child seat, booster seat or seat belt.<sup>32</sup>

In December 2006, the One Person, One Seat belt legislation came into effect requiring every occupant in a motor vehicle to be buckled up properly. The law makes it clear that only one person can use one seat belt at one time.

The penalty for seat belt infractions is a fine between \$60 to \$500. Convicted offenders receive two demerit points.<sup>33</sup>



ATVs can weigh up to 272 kg and are not safe for children and young teenagers, who don't have the strength or skill to handle them properly.<sup>34</sup> The Canadian Paediatric Society has recommended that children under 16 years of age be prohibited from operating or riding ATVs.<sup>8</sup>



Four out of five head injuries could be prevented if every cyclist wore a helmet.<sup>35</sup> New research suggests that the bike helmet law in Ontario has helped decrease the number of children (below the age of 16) killed in cycling crashes. This research supports extending the bike helmet law to cyclists of all ages.<sup>36</sup>



RIDE24/7, a county wide coalition, launched the "Safe Roads - Your Call" program throughout Simcoe County. This program empowers the public to take action against impaired driving by encouraging the use of 9-1-1 to report suspected impaired drivers.

## **Definitions**

### **Alcohol Involved**

includes:

1. Had Been Drinking: driver had consumed alcohol but his/her physical condition was not legally impaired.
2. Ability Impaired Alcohol over .08: driver had consumed alcohol and upon testing was found to have a blood alcohol level in excess of 80 milligrams of alcohol per 100 millilitres of blood.
3. Ability Impaired Alcohol: driver had consumed sufficient alcohol to warrant being charged with a drinking and driving offence.

**Blood Alcohol Concentration (BAC)** - the concentration of alcohol in the blood. The maximum legal blood alcohol concentration for fully licensed drivers is 80 milligrams in 100 millilitres of blood (.08).

**Cyclist** - pedal cycle - is any land transport vehicle operated solely by pedals. Includes: bicycle; tricycle.

**Distracted Driving**- driver was operating a motor vehicle without due care and attention or placing less than full concentration on driving; e.g. changing radio stations, consuming food, reading, talking on phone or two-way radio, using headphones.

**Drugged Driving** - driving a motor vehicle while impaired by any type of drug or medication or combination of drugs, medication and alcohol. These include illicit substances, mind-altering prescription medications, and over-the-counter remedies and medications that affect an individual's ability to drive safely.

**Fatal Collision** - a motor vehicle collision in which at least one person sustains bodily injury resulting in death. Prior to January 1, 1982, fatal collision statistics included deaths attributed to injuries sustained in the collision for up to one year after the collision. Since that date, only deaths within 30 days of the collision have been included.

**Fatal Injury** - person killed immediately or within 30 days of the motor vehicle collision.

**Fatigue** - is a reluctance to continue performing the task at hand caused by physical labour or repetitive and monotonous activities, such as monitoring a display screen or driving long distances. Fatigue affects traffic safety by compromising the ability to drive safely. Fatigue leads to impaired performance at the wheel and can ultimately result in falling asleep at the wheel.

**Impaired Driving** - is the operation of a vehicle when your ability is affected by alcohol or drugs. Impairment due to alcohol is commonly referred to as drinking and driving or drunk driving.

**Motor Vehicle** - may refer to various transport vehicles.

**Motorcycle** - is a two-wheeled motor vehicle with one or two riding saddles and sometimes with a third wheel for the support of a sidecar. The sidecar is considered part of the motorcycle.

**Non Traffic Collision** - is any vehicle collision that occurs entirely in any place other than a public highway.

**Off-Road Vehicle** - special all-terrain or other motor vehicle designed primarily for off-road use (includes ATV's, snowmobiles and other off-road motor vehicles).

**On-Road Vehicle** (other than motorcycle) - transport vehicles including car, van, pick-up truck, heavy transport vehicle, bus, and three wheeled vehicle designed primarily for on-road use. A trailer or caravan being towed by a vehicle is considered a part of the vehicle.

**Pedestrian** - a person travelling on foot. Pedestrian is also any person involved in a collision who was not at the time of the collision riding in or on a motor vehicle, railway train, streetcar, animal-drawn vehicle, pedal cycle or animal.

**Traffic Collision** - is any vehicle collision occurring on the public highway (e.g. originating on, terminating on, or involving a vehicle partially on the highway). A vehicle collision is assumed to have occurred on the public highway unless another place is specified, except in the case of collisions involving only off-road motor vehicles, which are classified as non-traffic collisions unless the contrary is stated.

## Data Sources

### Census

The Canadian Census is conducted by Statistics Canada every five years to provide a reliable source for describing the characteristics of Canada's people, dwellings and agricultural operations. The Census provides the population and dwelling counts not only for Canada but also for each province and territory, and for smaller geographic units such as cities or districts within cities. The Census also provides information about Canada's demographic, social and economic characteristics. The most recent Census of Canada took place on Tuesday, May 16, 2006.

### Emergency Room (ER) Visits

Data on ER visits is a component of the Ambulatory Visit Database, obtained from the National Ambulatory Care Reporting System (NACRS) developed by the Canadian Institute for Health Information (CIHI) and the Ministry of Health and Long-Term Care of Ontario (MOHLTC). The system collects patient level data on visits to a hospital's ambulatory services, in this case, emergency rooms. The data presented in this report includes ER visits from January 1, 2003 to December 31, 2007. The data represents the number of ER visits, not the number of people visiting the ER.

### Hospital Inpatient Discharges

Data are collected from each patient's chart at the time of discharge from hospital and are recorded on an abstract provided by Canadian Institute for Health Information (CIHI). The abstract collects information on the patient and the nature of their stay. One abstract is completed for each separation (stillbirth, death, discharge) from the hospital. The main diagnostic code gives the primary reason for the hospital stay or "most responsible diagnosis" (MRD). A second set of codes, external cause or "e-codes", are used to classify the environmental events, circumstances and conditions that cause an injury (e.g. motor vehicle injury). While the e-codes are the principal means for classifying injury deaths, they are not used as a MRD for hospitalizations so they need to be examined separately.

The data source contains discharge records, not admissions. The data is reported for completed cases only. Hospitals do not report on cases that are still being treated. The data presented in this report includes discharges from January 1, 2003 to December 31, 2007. The data represents the number of discharges, not the number of people.

### Ministry of Transportation

The Ontario Ministry of Transportation (MTO) maintains a database on every reportable motor vehicle collision that occurs in Ontario. The data are based on the motor vehicle accident report completed by the investigating police officer or staff at a Collision Reporting Centre. Three groupings of files are on the database: collision information (e.g. location, number of vehicles involved, road conditions), driver/vehicle information (e.g. driver's age and condition, vehicle type) and if a collision results in injury, information about the persons involved (age, sex, position in the vehicle). The files are linked by a common identification number. Collision data are provided geographically by place of occurrence, not by the residence of the driver or injured person. Analysis based on place of occurrence can be misleading since collisions may occur to people who do not live in that area, particularly if the area is frequented by tourists and commuters.

### Mortality

Mortality data are derived from death certificates completed by physicians, which are collected by the Office of the Registrar General (ORG). The cause of death reported is that which initiates the sequence of events leading to death. Consequently, there may be some uncertainty in classifying when there are multiple causes of death. Determining true cause of death may be influenced by the social or legal conditions surrounding the death and by the level of medical investigation, e.g. AIDS and suicide. Data is analyzed by the residence of the deceased, not where the death occurred. Records for Ontario residents who die outside of the province are not available and are therefore excluded. Otherwise, due to legal reporting requirements, registration of deaths is considered to be virtually complete.

### Population Estimates

The source data used are population estimates by single year of age (up to 90+) and sex for Ontario's Census Subdivisions (CSD) as of July 1, 1986 to 2007. The population estimates are produced by the Demography Division, Statistics Canada, and are based on the 1986, 1991, 1996 and 2001 census counts adjusted for net undercoverage. The latest update to the population estimates includes revisions to postcensal estimates for 2005 to 2006 and new estimates for 2007, released by Statistics Canada in May 2008.

### Rapid Risk Factor Surveillance System (RRFSS)

RRFSS is an ongoing monthly telephone survey that occurs in various public health units across Ontario. Every month, a random sample of 100 adults aged 18 years and older in each participating health unit area is interviewed regarding awareness, knowledge, attitudes and behaviours about topics and issues of importance to public health. These can include: smoking, sun safety, use of bike helmets, water testing in private wells, air quality, etc. The telephone survey is conducted by the Institute for Social Research (ISR) at York University on behalf of the Simcoe Muskoka District Health Unit (SMDHU).



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