



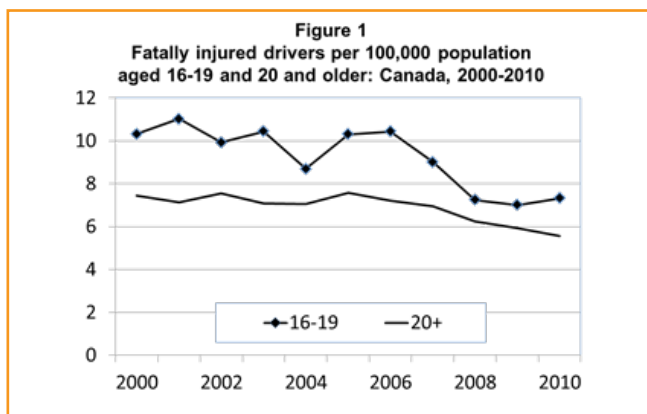
TRENDS AMONG FATALLY INJURED TEEN DRIVERS, 2000-2010

Traffic Injury Research Foundation, October 2013

Introduction

In Canada, motor vehicle collisions are the leading cause of death among persons under 24 years of age (Public Health Agency of Canada 2012). This fact sheet, sponsored by State Farm®, summarizes the characteristics of fatally injured teen drivers (aged 16-19) from 2000 to 2010.

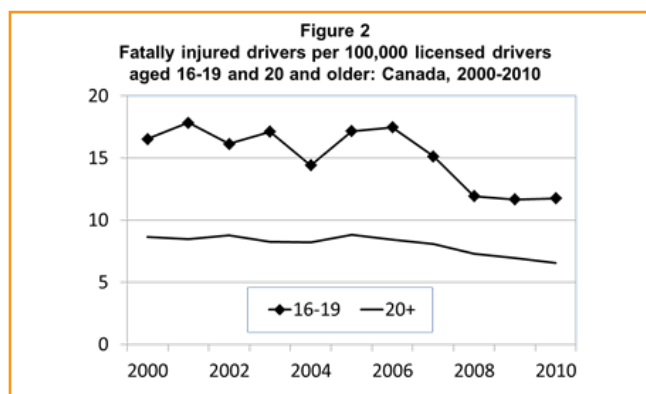
Figure 1 shows the number of fatalities per 100,000 population for 16-19 year old drivers and drivers aged 20 and older from 2000 to 2010. There has been a general downward trend in the number of driver fatalities per 100,000 population for both age groups during this 11-year period.



As can be seen, the rate of drivers killed per 100,000 population for 16-19 year olds has been consistently greater than the rate for drivers aged 20 and older. In 2000, among 16-19 year olds, the rate of drivers killed

was 10.3, compared to 7.4 for drivers aged 20 and older. In 2010, the rate of drivers killed among 16-19 year olds was 7.3, compared to 5.6 for drivers aged 20 and older. Among drivers aged 20 and older, the downward trend has been gradual. Among drivers aged 16-19, there was a more pronounced decrease in the number of driver fatalities per 100,000 population from 2006 to 2008, followed by a more stable trend in the past two years.

Figure 2 shows the number of fatalities per 100,000 licensed drivers for drivers aged 16-19 and drivers aged 20 and older from 2000 to 2010.

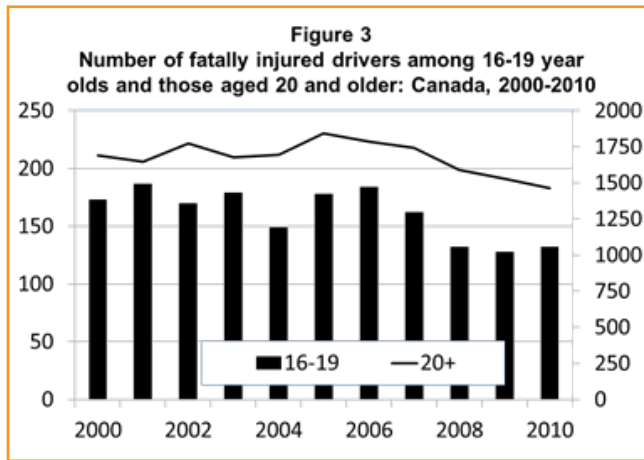


Similar to **Figure 1**, the rate of drivers killed per 100,000 licensed drivers for 16-19 year olds is consistently greater than the rate for drivers aged 20 and older. This means that, proportionally speaking, younger drivers are more often killed in road crashes than drivers aged 20 and older. In 2000, among 16-19 year olds, the rate of drivers killed was 16.6, compared to 8.7 for drivers aged



20 and older. In 2010, the rate of drivers killed among 16-19 year olds was 11.8, compared to 6.5 for drivers aged 20 and older. The gap in the rates for 16-19 year old drivers and drivers aged 20 and older narrowed between 2006 and 2008 meaning that there were fewer differences between these age groups. Since then, the rate of drivers killed per 100,000 licensed drivers has been stable for 16-19 year olds while declining slightly for those aged 20 and older.

Figure 3 shows the number of fatally injured 16-19 year old drivers and drivers aged 20 and older who died from 2000 to 2010. The number of drivers aged 16-19 is plotted with black bars and measured on the axis on the left. The number of drivers aged 20 and older is plotted with a line and measured on the axis on the right. As can be seen, there has been a general decrease among drivers who were killed during this period.



In 2000, there were 1,897 drivers killed, of which 173 (or 9.1%) were drivers aged 16-19. By comparison, in 2010, there were 1,621 total drivers killed. The greatest number of 16-19 year old drivers were killed in 2001 (187) whereas the greatest number of drivers aged 20 and older that were killed occurred in 2005 (1,844). Among 16-19 year old drivers, there was a more pronounced decrease (23.7%) from 173 in 2000 to 132 in 2010; in contrast the decline was much smaller among drivers aged 20 and older, dropping from 1,691 to 1,464, or 13.4%.

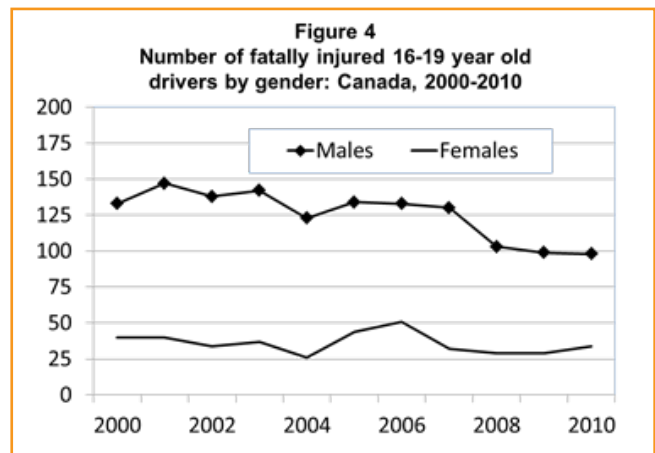
Characteristics of Teen Drivers

This section describes the demographic characteristics of fatally injured 16-19 year old drivers to identify

differences among fatally injured drivers within this age group.

Generally speaking, more male drivers are killed in motor vehicle collisions than females. In 2000, among fatally injured drivers of all ages, 80.1% were males; this percentage was almost unchanged at 79.7% in 2010. An examination of the percentage of fatally injured 16-19 year old drivers revealed that 76.9% were males in 2000 and the percentage decreased slightly to 74.2% in 2010. Thus, the proportion of fatally injured drivers that were male has remained consistent among 16-19 year old drivers in general and among drivers of all ages specifically. Among both 16-19 year olds and persons of all ages, the proportion of fatally injured drivers that are male are over-represented given that the percentage of licensed drivers that are males has ranged from 52-54% for both age groups during this time.

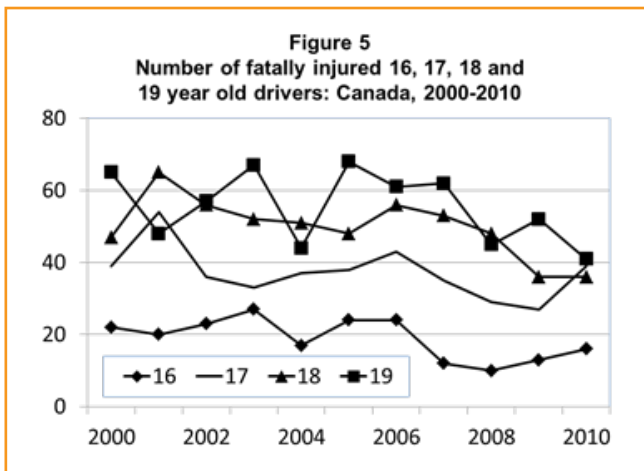
Figure 4 shows the number of fatally injured 16-19 year old drivers by gender during this period. Among both genders for fatally injured 16-19 year old drivers, there has been a decrease from 2000 to 2010. Among males, there was a decrease from 133 to 98 fatally injured drivers (26.3%). In 2000, there were 40 fatally injured female drivers compared to 34 in 2010, representing a 15% decrease. The number of fatally injured 16-19 year male drivers has decreased consistently since 2005. Among females, there had been a decrease between 2006 and 2008. However, in the past two years, the number of fatally injured 16-19 year old female drivers has increased.



In 2000, 16 year olds accounted for 12.7% of fatally injured 16-19 year old drivers. Drivers aged 17 comprised 22.5% of the total, and 18 year olds accounted for 27.2%. The largest percentage of drivers

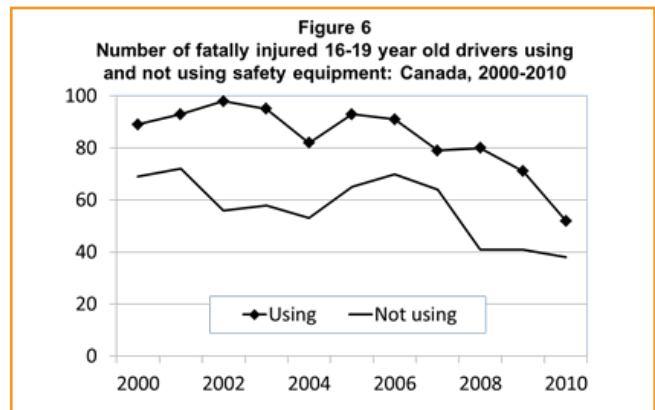
were 19 years old (37.6%). Ten years later, 31.1% of fatally injured 16-19 year old drivers were 19 years old, 29.5% were 17, 27.3% were 18 and 12.1% were 16 years old.

Figure 5 shows the number of fatally injured 16-19 year old drivers by individual years of age. In 2000, the number of fatally injured drivers increased with age; 22 were 16 years old, 39 were 17 years old, 47 were 18 years old, and 65 were 19 years old. In 2010, 16 were aged 16, 39 were aged 17, 36 were aged 18, and 41 were aged 19. Thus, 16 year olds have consistently accounted for the fewest number of fatalities among 16-19 year old drivers from 2000 to 2010. This can likely be attributed to the fact that more 16 year old drivers have learner permits rather than full licences and are therefore subject to driving restrictions that limit their exposure compared to drivers aged 17-19. However, among the youngest drivers (16 and 17 years of age), there has been an increase in the number of fatally injured drivers in recent years. At this stage, it remains to be seen whether this is part of an ongoing trend as the number of fatally injured drivers is relatively low and the apparent trend only spans a short period of time (i.e., two increases, one in 2009 and one in 2010).



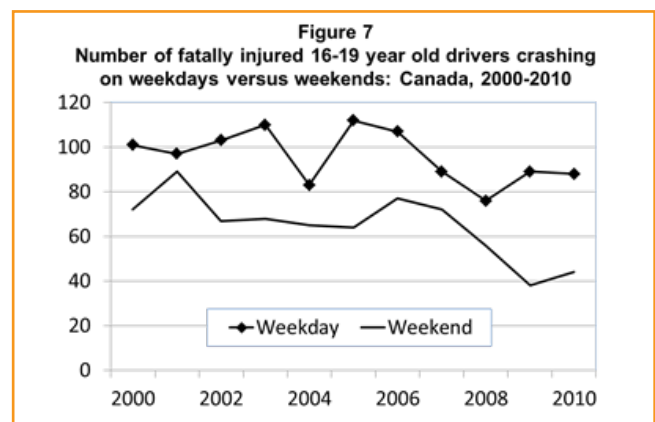
The prevalence of the use of safety equipment (seatbelts for cars, trucks, vans or helmets for motorcycles, ATVS, snowmobiles, bicycles) among 16-19 year old fatally injured drivers is shown in **Figure 6**. The majority of fatally injured drivers have used safety equipment during this 11-year period. It should be noted that, since 2008, there has been a decrease in the number of fatally injured drivers who used safety equipment but there has not been a corresponding decrease among the

number of fatally injured drivers who did not use safety equipment.



A comparison was made to determine whether more teen driver fatalities occurred on the weekend (between 6 p.m. Friday and 5:59 p.m. on Sunday) or on a weekday (from 6 p.m. on Sunday to 5:59 p.m. on Friday).

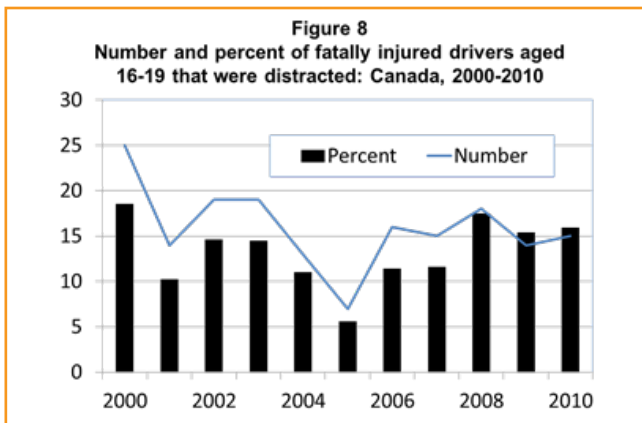
Figure 7 compares fatally injured drivers aged 16-19 in terms of whether the collision occurred on a weekday or during the weekend. As can be seen, in 2000, 101 (58.4%) 16-19 year old fatally injured drivers crashed on a weekday as opposed to 72 (41.6%) who crashed during the weekend. In 2010, 88 (66.7%) fatally injured 16-19 year old drivers crashed on a weekday as opposed to 44 (33.3%) who crashed during the weekend. Between 2006 and 2009, the number of fatally injured 16-19 year old drivers who crashed on the weekend decreased substantially before rising slightly in 2010. From 2005 to 2008, there was a decrease in the number of fatally injured 16-19 year old drivers who crashed during the week, but this number has generally risen since then.



Contributing Factors in Collisions Involving Teen Drivers

This section describes the role of contributing factors that may cause teen drivers to be involved in collisions. These include behaviours that can play a role in collisions (distraction, speed), factors that may lead to impairment (alcohol, drug use, fatigue), and environmental factors (adverse road conditions such as slippery surface, drifting snow, construction, a defective surface or shoulder, inadequate lane markings, and/or an inactive or malfunctioning traffic control device). Caution should be taken in interpreting the figures presented in this section as, in some cases, the number of 16-19 year old fatally injured drivers illustrated for an individual year is small.

Figure 8 shows the number and percentage of fatally injured drivers aged 16-19 who were considered to be distracted. Among fatally injured 16-19 year old drivers, 25 were distracted in 2000. This number generally decreased to seven in 2005 and rose to 16 in 2006. Since then, the number of fatally injured distracted drivers aged 16-19 has been stable, reaching 15 in 2010. The highest percentage of fatally injured 16-19 year old drivers that were distracted was found in 2000 (18.5%). The percentage generally decreased until 2005 (5.6%), then rose to 17.5% in 2008. In 2010, 16.0% of fatally injured drivers aged 16-19 were distracted.



In **Figure 9**, the number and percentage of fatally injured drivers aged 16-19 who were considered to be speeding is shown. Among fatally injured 16-19 year old drivers, 53 drivers were speeding in 2000. This number decreased to 36 in 2005 and peaked at 54 in 2007. Since then, the number of 16-19 year old drivers who were speeding decreased to 32 in 2010. In 2000, 35.6% of fatally injured 16-19 year old drivers were speeding. The percentage generally decreased to 24.7% in 2005 and reached a high of 41.7% in 2008. The percentage

of fatally injured drivers who were speeding decreased to 28.8% in 2010.

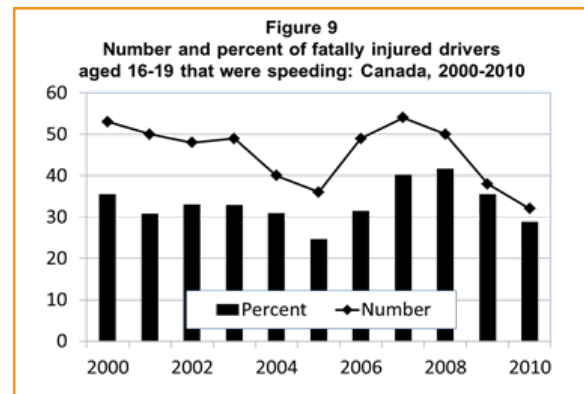
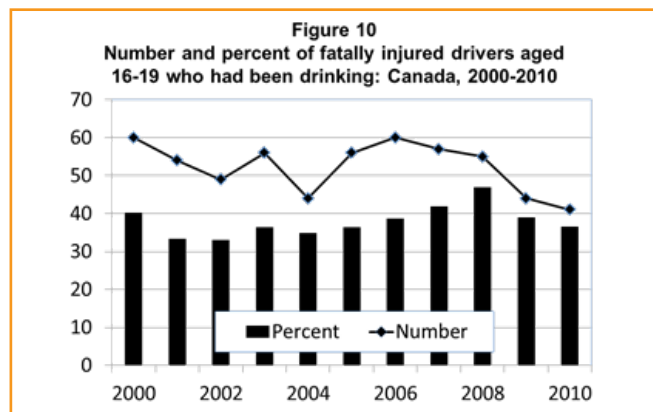


Figure 10 shows the number and percentage of fatally injured drinking drivers among 16-19 year olds during this period. Generally speaking, the number of fatally injured 16-19 year old drivers who had been drinking has decreased from 2000 to 2010 (60 to 41). Since reaching a high of 60 again in 2006, the number of fatally injured drivers has declined to its lowest level (41) in 2010. The percentage of fatally injured 16-19 year old drivers who have been drinking generally increased from 2000 to 2008, then decreased until 2010. The lowest percentage of fatally injured 16-19 year old drivers who had been drinking (33.1%) occurred in 2002. This figure rose to 47.0% in 2008 and then decreased to 36.6% in 2010.

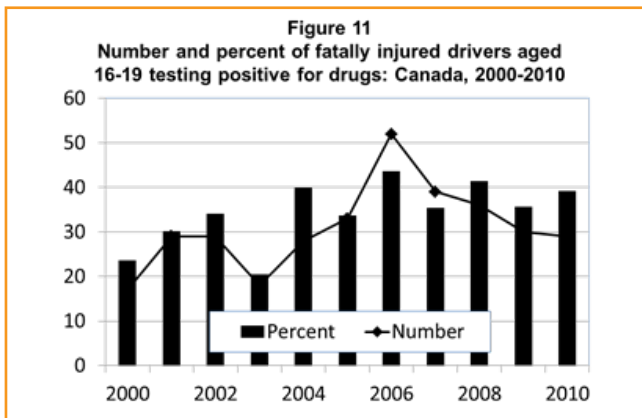
Further analysis of fatally injured drinking drivers shows, that in 2010, 44.0% of 16-19 year old drivers were accompanied by one or more passengers. This compares with only 25.5% of fatally injured drivers aged 20 and older who had passengers in their vehicle.



Fatally injured drivers are less likely to be tested for the presence of drugs (illicit and prescription) than for the

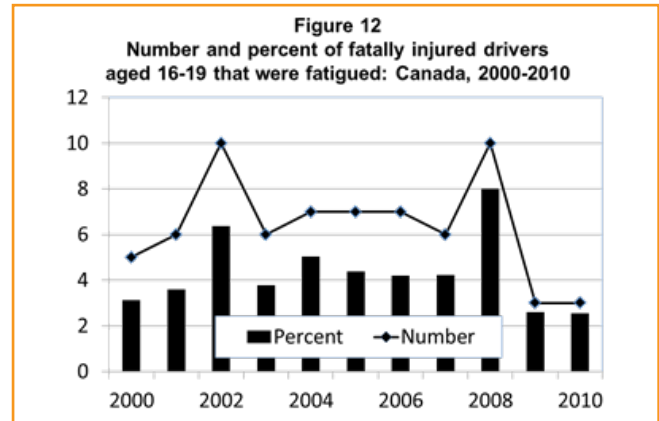
presence of alcohol. From 2000 to 2010, an average of 55.4% of fatally injured 16-19 year old drivers in Canada was tested for drugs while 85.9% was tested for alcohol. Between 2000 and 2010, not only were fewer drivers of all ages tested for drugs than for alcohol, but the testing rate was more variable (between 38.3% in 2000 and 61.9% in 2009).

Figure 11 shows the number and percentage of fatally injured drivers aged 16-19 who tested positive for the presence of drugs. Among fatally injured 16-19 year old drivers, 23.6% tested positive for drugs in 2000. In 2003, 20.5% of drivers tested positive for drugs, increasing to 43.7% in 2006. This percentage decreased slightly to 39.2% in 2010. Although not shown in this figure, among fatally injured 16-19 year old drivers who were tested, the drugs most commonly found during this period were cannabis, cocaine and amphetamines. The number of 16-19 year old fatally injured drivers who have tested positive for drugs has decreased since 2006. In terms of percentages, there was a general increase in fatally injured drivers testing positive from 2003 to 2006, followed by a general decrease until 2010. Given that fewer drivers are tested for drugs other than alcohol, part of this unstable trend can be explained by a smaller sample size.



In **Figure 12**, the number and percentage of fatally injured drivers aged 16-19 who were considered to be fatigued is shown. Among fatally injured 16-19 year old drivers, five were fatigued in 2000. In 2002 and 2008, ten drivers were fatigued, and this number dropped to three in 2009 and remained there in 2010. In terms of percentages, 3.1% of fatally injured drivers were fatigued in 2000. This percentage peaked in 2008 (8.0%) before decreasing to a low of 2.6% in 2009 and 2010.

Although these numbers are very low, it is possible that the other contributing factors such as alcohol use, drug use, distraction and speeding may take precedence over fatigue when fatal collisions are coded.



As drivers gain more experience behind the wheel, it can be expected that they will be more capable of adapting to adverse road conditions, or in extreme cases, less willing to drive in perilous weather. In 2010, 4.6% of 16-19 year old drivers killed were involved in a collision where there were adverse road conditions. This compares with 3.9% of fatally injured drivers aged 20 and older who encountered adverse road conditions.

Conclusions

Among 16-19 year old drivers there has been, in recent years, a decrease in the number of fatalities as well as the rate of fatally injured drivers by population and licensed drivers. However, these young drivers are nevertheless over-represented compared to drivers aged 20 and older. Analysis of these trends using demographic characteristics such as age and gender confirm that males are more likely than females to be killed, and that 16-year olds are less likely than 17-19 year olds to be killed.

While there has been a recent decrease in the number of fatally injured drivers aged 16-19 years old who were speeding, there has been little change in the number of drivers in this age group who were distracted. During the mid-2000s several Canadian jurisdictions introduced tough penalties for young drivers who were speeding or street-racing. This may have contributed to progress made in reductions in fatally injured 16-19 year old drivers who were speeding.

Significant decreases have been made in reducing the number and percent of fatally injured drinking drivers aged 16-19. This may be in part attributable to

the high level of awareness of this problem and zero BAC restrictions for beginner drivers although it has to be noted that there have also been comparable decreases in fatally injured drinking drivers of all ages. While there have been decreases in the number of drug-impaired fatally injured drivers aged 16-19, the percentage has not decreased in a similar fashion. It warrants mentioning that any trends based on numbers regarding drug-impairment among 16-19 year olds may be unstable given that the absolute numbers of drivers aged 16-19 tested for drug impairment is small.

The good news is that shifts in attitudes towards drinking and driving that have been evident among the general population have been paralleled among young Canadians.

In fact, in a 2010 national poll on this issue investigating attitudes and behaviours among young drivers, those aged 16-24 reported concern about young impaired drivers. In particular, 82% consider young drivers impaired by alcohol to be a serious or extremely serious problem and 70% consider young drivers impaired by drugs as a serious or very serious problem. (Marcoux et al, 2010).

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Traffic Injury Research Foundation

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