



## TRENDS AMONG FATALLY INJURED TEEN DRIVERS, 2000-2012

*Traffic Injury Research Foundation, October 2015*

### Introduction

Motor vehicle collisions are the leading cause of death in Canada for persons aged 15-24 (Public Health Agency of Canada 2012, p.10). This fact sheet, sponsored by Desjardins Insurance, summarizes the characteristics of fatally injured teen drivers (aged 16-19) from 2000 to 2012. It also provides an update of an earlier fact sheet which examined trends among fatally injured teen drivers from 2000 to 2010 (Traffic Injury Research Foundation 2013).

The data that were analyzed to inform this 2015 fact sheet and the previous 2013 fact sheet are based upon the Traffic Injury Research Foundation's (TIRF) National Fatality Database. There are some differences in the data in this 2015 fact sheet compared to the 2013 edition. Fatality data from British Columbia for 2011 and 2012 were not available at the time the 2015 fact sheet was prepared. As a result, Canadian data presented in this fact sheet have been re-calculated to exclude this jurisdiction and make equitable comparisons.

It is well-recognized that a variety of factors are associated with teen driver crashes including the non-use of safety equipment, speed, distraction, fatigue and the use of alcohol and drugs. To gain insight into progress in reducing teen driver crashes, Desjardins Insurance has sponsored this fact sheet that contains the latest data about trends,

the characteristics of teens involved in young driver crashes, and the role of contributing factors.

This fact sheet summarizes the number and percent of 16-19 year old drivers killed in road crashes compared to drivers aged 20 and older. It also examines driver characteristics such as sex, age and temporal factors, as well as contributing factors in teen driver collisions. Trends and characteristics examined in this fact sheet span a 13-year period (2000 to 2012). Fatally injured drinking drivers are defined as individuals who test positive for alcohol as measured by blood alcohol concentration (BAC).

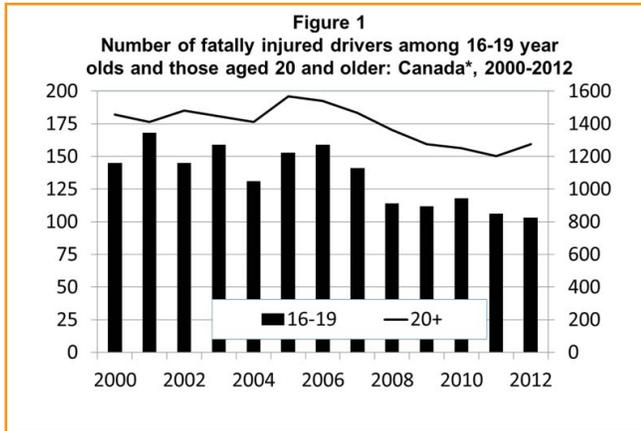
### Trends in Fatally Injured Drivers

The number of fatally injured drivers aged 16-19 and 20 and older who were killed in road crashes from 2000 to 2012 in Canada is shown in Figure 1. The numbers for 16-19 year old drivers are plotted with bars and measured on the axis on the left. The numbers for drivers aged 20 and older are plotted with a line and measured on the axis on the right. Among both age groups, there has been a general decline in the number of drivers who were killed during this period.

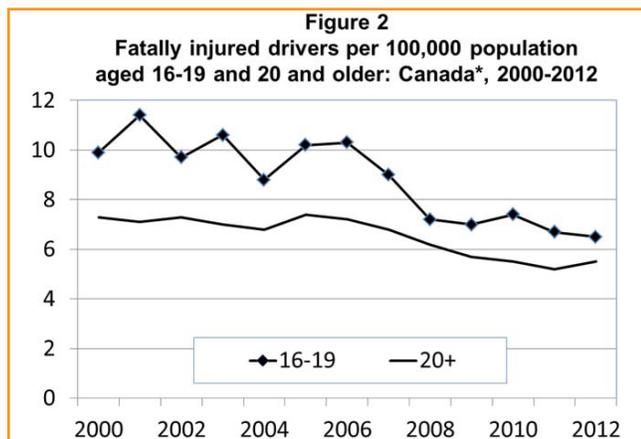
In 2000, drivers aged 16-19 accounted for 9.1% (145 out of 1,601) among all drivers aged 16 and older who were killed in a road crash. This percentage declined to 7.5% (103 out of 1,377) in 2012. During this period, the largest number of 16-

<sup>1</sup> Data from British Columbia are excluded from the analyses in this fact sheet since fatality data from this jurisdiction were not available for 2011 and 2012 at the time of publication.

19 year old drivers died in 2001 (168) as compared to the largest number of drivers aged 20 and older who were killed in 2005 (1,568). In summary, there was a 29.0% decrease (145 to 103) among fatally injured 16-19 year old drivers between 2000 and 2012, and this was much greater than the 12.5% decrease among those aged 20 and older (1,456 to 1,274).



Analyses were also conducted to examine trends in the number of teen drivers versus drivers aged 20 and older in relation to per 100,000 population. The results of these analyses are presented below. There has been a general downward trend in the number of driver fatalities per 100,000 population for drivers aged 16-19 and 20 and older from 2000 to 2012 in Canada. Figure 2 shows the number of fatalities per 100,000 population for both age groups during this 13-year period and reveals that the rate of 16-19 year old drivers killed per 100,000 population has been consistently higher than the rate for drivers aged 20 and older.



To illustrate, among 16-19 year olds, the rate of drivers killed was 9.9 in 2000, compared to 6.5 in 2012. However, among drivers aged 20 and older, the rate was 7.3 in 2000 and declined slightly to

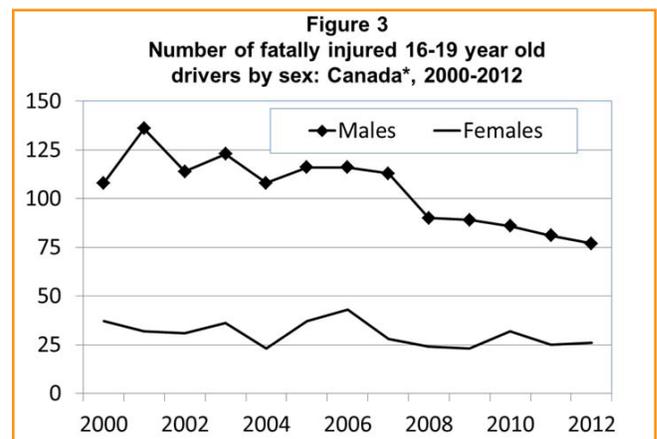
5.5 in 2012. These data reveal a more pronounced decrease in the number of 16-19 year old driver fatalities per 100,000 population between 2006 and 2008 in particular, followed by a more modest decrease in the past four years. Conversely, the trend shows a more gradual decline among drivers aged 20 and older during the same period.

## Characteristics of Teen Drivers

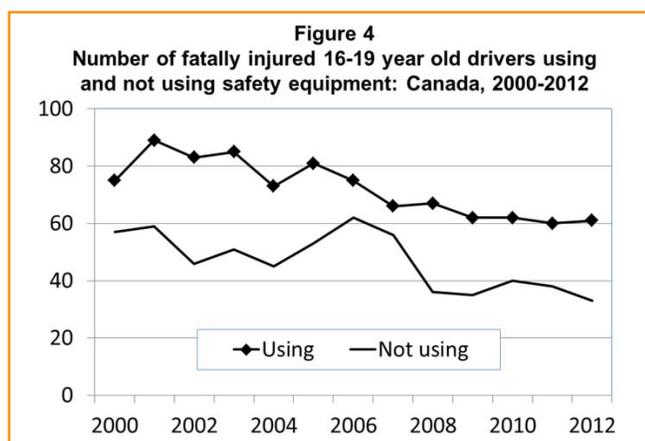
This section describes the demographic characteristics of fatally injured 16-19 year old drivers in relation to sex, the use of safety equipment, and temporal factors in order to highlight differences among fatally injured drivers within this age group.

Generally speaking, more male drivers are killed in motor vehicle collisions than female drivers. To illustrate, in 2000, among fatally injured drivers of all ages, 80% were males and this percentage decreased slightly to 79.4% in 2012. Similarly, among fatally injured 16-19 year old drivers, 74.5% were males in 2000 and this percentage increased slightly to 74.8% in 2012. Thus, the proportion of fatally injured drivers that were male has remained consistent among drivers of all ages, as well as drivers aged 16-19. These data show that among drivers of all ages as well as drivers aged 16-19, males are over-represented. This is consistent in light of the fact that males represented 52% to 54% of licensed drivers for both age groups during this period.

Figure 3 shows the number of fatally injured 16-19 year old drivers in Canada by sex during this period. As can be seen, there are more male fatally injured 16-19 year old drivers than females. Among fatally injured 16-19 year old drivers of both sexes, there has been a decrease from 2000 to 2012, however between 2006 and 2012, there was a more pronounced decrease among fatally injured 16-19 year old male drivers than females.



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 4. While the majority of fatally injured drivers in this age group used safety equipment during this 13-year period, it should be noted that, since 2006, there has been a more pronounced decrease in the number of fatally injured drivers who did not use safety equipment (62 to 33) than among the number of fatally injured drivers who used safety equipment (75 to 61). This suggests that efforts to promote the use of safety equipment among teens have been beneficial.

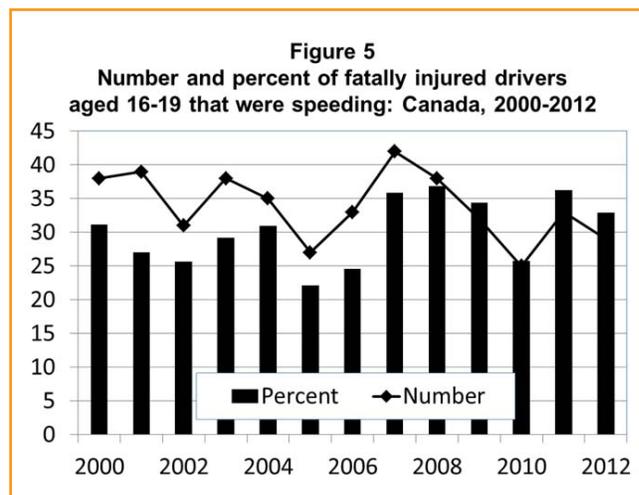


Analyses regarding teen driver crashes on weekends (between 6 p.m. Friday and 5:59 p.m. on Sunday) versus weekdays (from 6 p.m. on Sunday to 5:59 p.m. on Friday) were also conducted. It revealed that this crash characteristic has remained largely unchanged during this 13-year period. In 2000, 40.0% of 16-19 year old fatally injured drivers crashed during the weekend as compared to 41.3% in 2012.

### Contributing Factors in Collisions Involving Teen Drivers

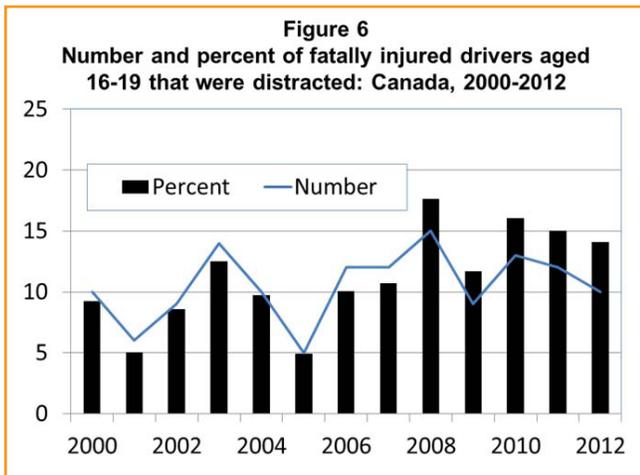
This section describes the role of contributing factors that may cause teen drivers to be involved in collisions and includes behaviours that can play a role in collisions such as speed and distraction as well as factors that may lead to impairment like fatigue, and alcohol or drug use. Caution is warranted when interpreting the figures presented in this section as, in some cases, the number of 16-19 year old fatally injured drivers shown by individual year is quite small.

The number and percentage of fatally injured drivers aged 16-19 who were considered to be speeding is shown in Figure 5. The number fluctuated between 2000 and 2012. There were 38 fatally injured teen drivers identified as speeding in 2000 and this decreased to 27 in 2005, peaked at 42 in 2007, decreased to a low of 25 in 2010, and reached 29 in 2012. In terms of the percentages, 31.1% of fatally injured 16-19 year old drivers in 2000 had been speeding. This percentage fell to a low of 22.1% in 2005 before peaking at 36.9% in 2008. In 2012, 33.0% of fatally injured 16-19 year old drivers were speeding. In summary, while progress reducing the percentage of teen drivers who were killed in crashes in which speed was a factor was initially achieved during this period, this progress has since been eroded, suggesting that continued efforts to increase awareness among teen drivers of the consequences of speeding are needed.



The role of distraction in teen driver crashes is presented in Figure 6, which shows the number and percentage of fatally injured drivers aged 16-19 who were considered to be distracted. There were 10 such drivers who were distracted in 2000. This number declined to five in 2005, and rose again to 15 in 2008. This was followed by a general decrease to 10 in 2012. An examination of percentages revealed that in 2000, 9.3% of fatally injured 16-19 year old drivers were considered to be distracted. This percentage rose to 17.7% in 2008, and then declined to 14.1% in 2012. The issue of distraction has grown dramatically in recent years, as evidenced by the prevalence of road safety campaigns highlighting the dangers of distraction as well as increased enforcement efforts. While some progress has been achieved in recent years

with teen drivers, efforts to increase awareness among teens must be sustained.



In Figure 7, the number and percentage of fatally injured drivers aged 16-19 who were considered to be fatigued are shown. Among fatally injured 16-19 year old drivers, five were fatigued in 2000 and this number fluctuated over the 13-year period. In 2002, nine drivers were fatigued; this decreased to just two in 2005, rose again to nine in 2008 and reached a low of one in 2012. In terms of percentages, 3.6% of fatally injured teen drivers were fatigued in 2000. This percentage peaked at 8.4% in 2008 before decreasing to a low of 1.1% in 2012. 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, and this illustrates the challenges associated with identifying fatigue as a factor in crashes at roadside with fatally injured drivers of any age.

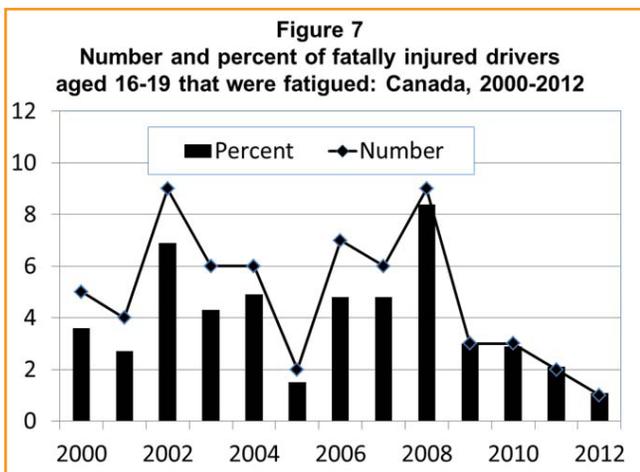
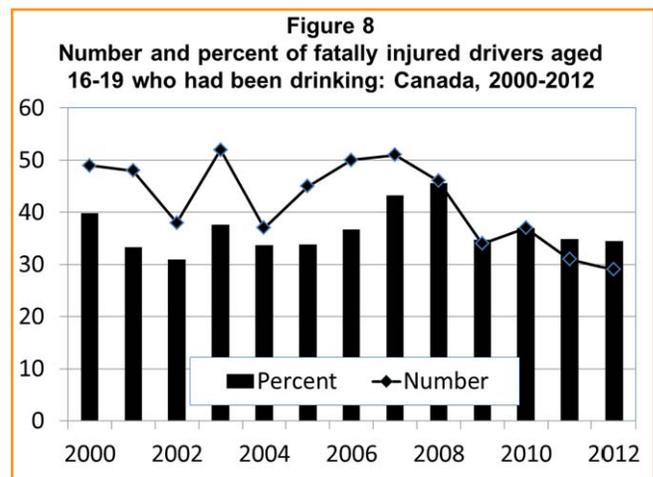


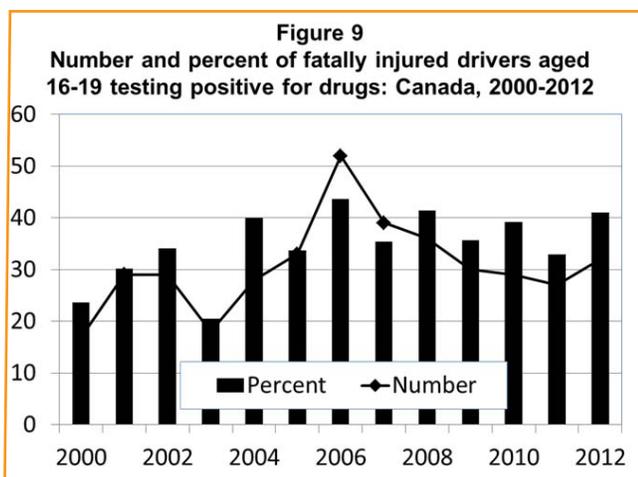
Figure 8 shows the number and percentage of fatally injured 16-19 year old drivers who had consumed any amount of alcohol during this period. Generally speaking, the number of fatally injured 16-19 year old drivers who had been drinking has decreased from 2000 to 2012 (49 to 29). In 2003 a high of 52 was reached, while the number has generally declined since 2007. The percentage of fatally injured 16-19 year old drivers who had been drinking decreased from 39.8% in 2000 to a low of 30.9% in 2002. This percentage peaked at 45.5% in 2008 before generally decreasing to 34.5% in 2012.



Further analysis of fatally injured drinking drivers shows that 50% of 16-19 year old drivers were accompanied by one or more passengers in 2012. This compares with only 19.6% of fatally injured drivers aged 20 and over who had passengers in their vehicle. In summary, alcohol continues to be a factor in slightly less than one-third of young driver crashes, which is a continued source of concern. In particular, these data suggest that a greater emphasis on the risks to passengers who ride with a young drinking driver is important to convey in messages to teens.

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 2012, an average of 63.2% of fatally injured 16-19 year old drivers in Canada was tested for drugs while 85.3% was tested for alcohol. Between 2000 and 2012, not only were fewer drivers of all ages tested for drugs than for alcohol, but the testing rate was more variable (between 35.4% in 2000 and 75.3% in 2012).

Figure 9 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, 26.4% tested positive for drugs in 2000. In 2003, a low of 20.3% of drivers tested positive for drugs and this escalated to 44.6% in 2006. This percentage fluctuated until 2012 when 41.0% of fatally injured 16-19 year old drivers tested positive for drugs. The number of 16-19 year old fatally injured drivers who tested positive for drugs decreased from 38 in 2006 to 23 in 2009 before rising to 32 in 2012. Given that a smaller number of drivers have been historically tested for drugs other than alcohol, part of this unstable trend can be explained by a smaller sample size.



## 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. 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 sex confirm that males are more likely than females to be killed as young drivers.

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 a smaller decrease in the number of drivers in this age group who were distracted. The introduction of tough penalties in the mid-2000s by several Canadian jurisdictions to combat speeding or street-racing among young drivers may account for progress made in reducing speed-related fatalities among 16-19 year old drivers. However, strategies to

reduce distracted-related fatalities among drivers of this age group are more recent and may have had less time to take effect.

Progress has been achieved in reducing the number and percent of fatally injured drinking drivers aged 16-19. This may be partly due to countermeasures such as zero BAC restrictions for beginner drivers and increased enforcement and educational efforts. While there has been a general decrease over the past six years in the number of drug-impaired fatally injured drivers aged 16-19, the percentage has fluctuated over the past nine years. It warrants mentioning that any trends based on numbers regarding drug-impairment among 16-19 year olds may be less stable (absolute numbers of drivers aged 16-19 tested for drug impairment are small and overall testing rates for the presence of drugs can vary from year to year and from one jurisdiction to the other). Nevertheless, despite some improvement, the results warrant concern about drugged driving and, despite the progress, alcohol impaired driving.

In conclusion, while some of the findings in this fact sheet suggest progress has been made in relation to road safety of teens, there is still considerable room for improvement to further reduce the death toll in this age group. Especially speeding, distraction and alcohol or drug impairment warrant our attention.

## References

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## Traffic Injury Research Foundation

The mission of the Traffic Injury Research Foundation (TIRF) is to reduce traffic-related deaths and injuries. TIRF is a national, independent, charitable road safety institute. Since its inception in 1964, TIRF has become internationally recognized for its accomplishments in a wide range of subject areas related to identifying the causes of road crashes and developing programs and policies to address them effectively.

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