



DOWN A DANGEROUS ROAD

Knox County
Health Department
 Every Person, A Healthy Person

Introduction

Each year, approximately 6,500 younger drivers (ages 15-24 years) are involved in motor vehicle (MV) crashes in Knox County, Tennessee (ORSA, 2011a). National and state statistics suggest that teens aged 15-19 years of age are four-times more likely to be in MV crashes than all other age groups (CDC, 2010; ORSA, 2009). In addition, MV accidents are the leading cause of death among teens in the US and Tennessee (NCIPC, 2012).

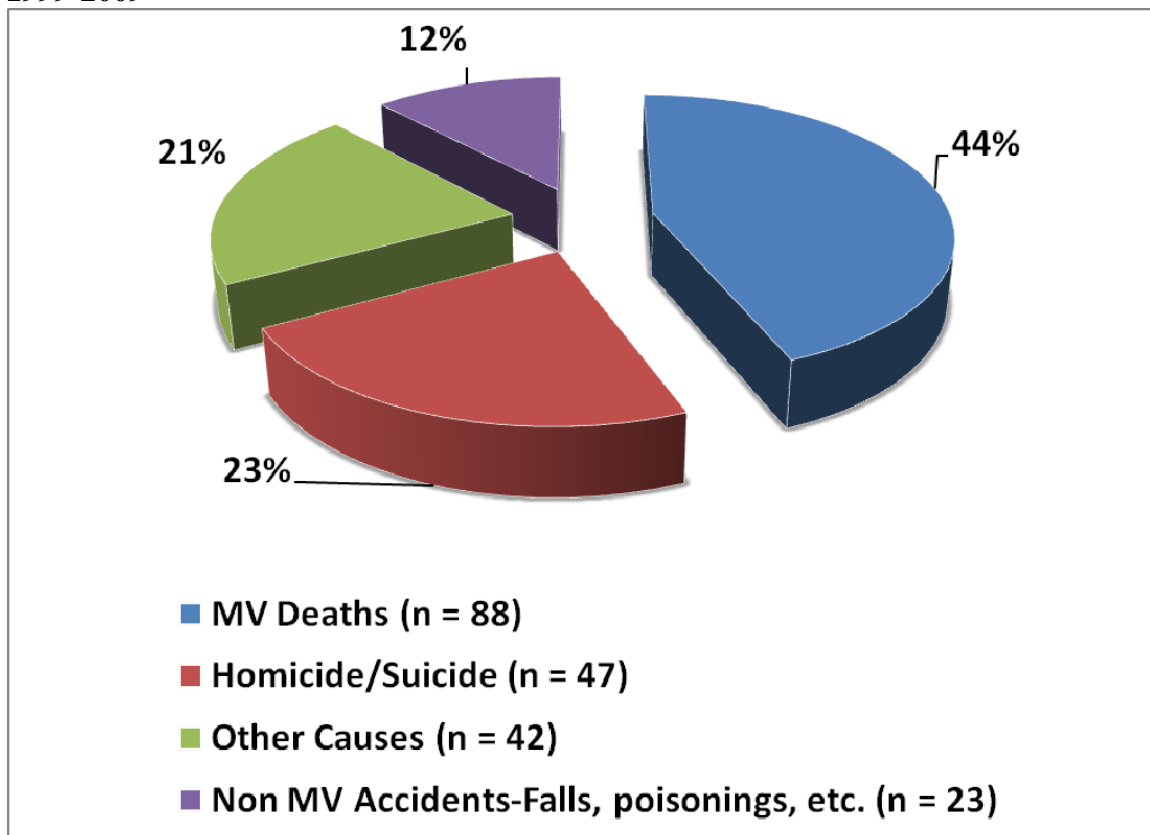
Purpose

The purpose of this report is to estimate how MV accidents are affecting the health of Knox County teens and provide a brief discussion of possible solutions.

How significant a problem are teenage MV accidents?

From 1999 to 2009, Knox County's teens (aged 15-19 years) were more likely to die from MV crashes than any other cause of death (see Figure 1).

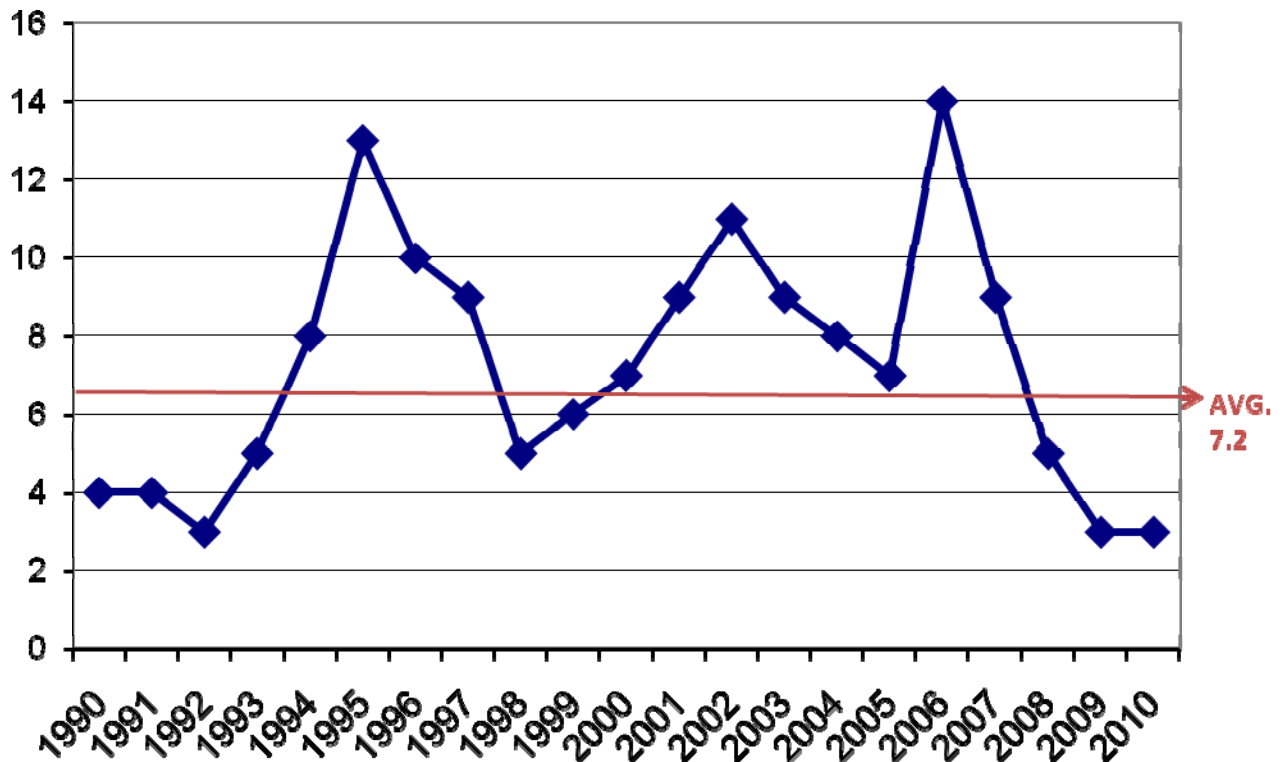
Figure 1: Leading causes of death among Knox County, Tenn. teens (aged 15-19): 1999-2009



Source: Tennessee Department of Health, Health Information Tennessee (HIT) Website On-line interactive database

From 1990 to 2010, among Knox County teens (aged 15-19), there was an average of 7.2 motor vehicle-related fatalities each year (see Figure 2).

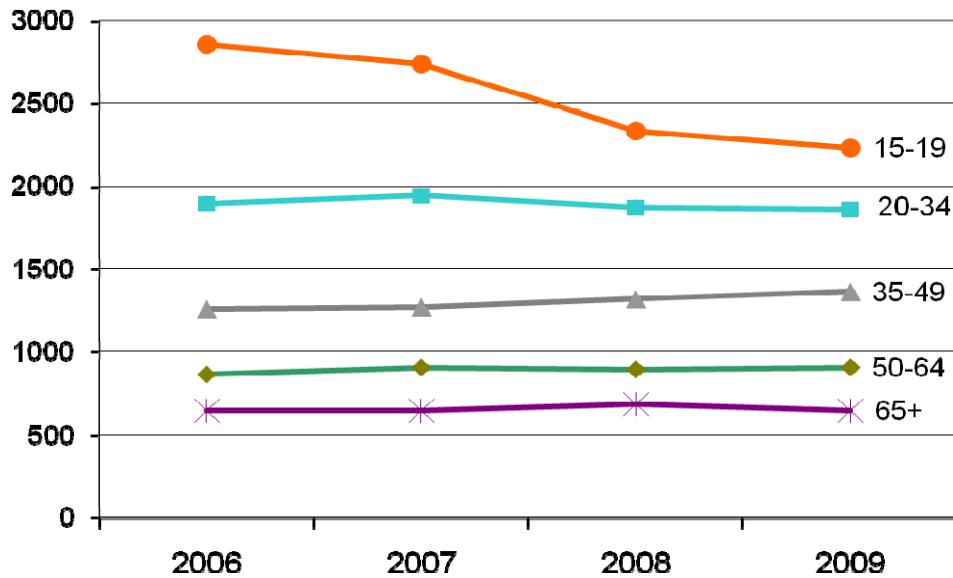
Figure 2: Frequency distribution of mortalities due to motor vehicle accidents among Knox County, Tenn. teens (15 to 19 years): 1990-2010



Source: Tennessee Dept. of Health HIT Website & Knox County Mortality Records (2010), Office of Policy, Planning and Assessment, Tennessee Department of Health

When it comes to non-fatal injuries, teens are also more likely to visit a hospital ER for motor vehicle-related injuries in Knox County compared to drivers in other age group (see Figure 3). In 2009, there were 36 inpatient hospital stays and 609 outpatient emergency room visits for motor vehicle crash-related injuries among teens (15-19 years) in Knox County.

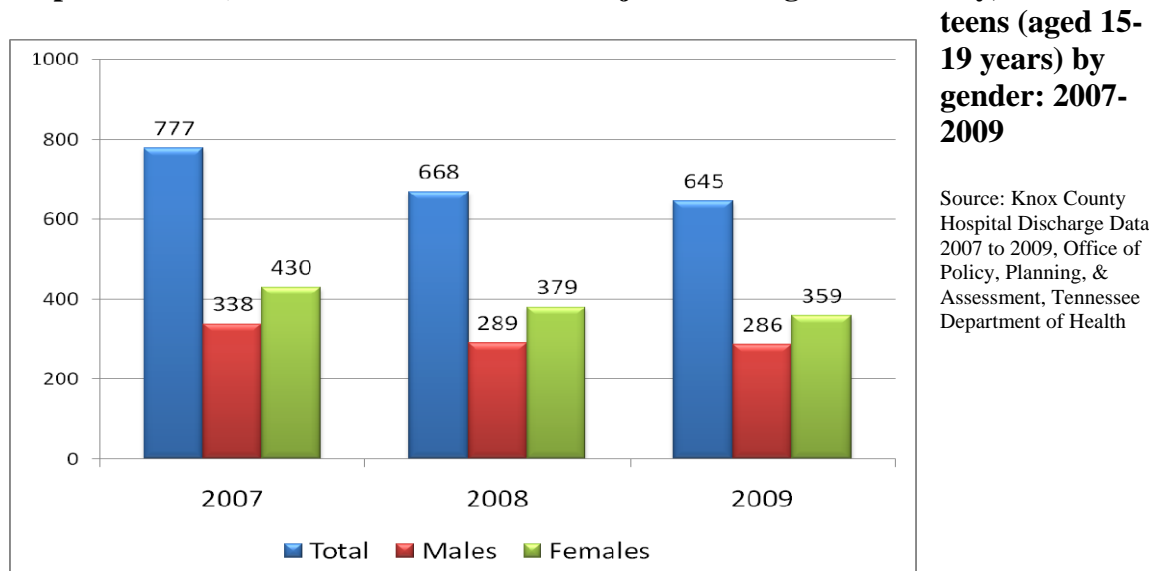
Figure 3: Combined inpatient and outpatient hospital visit rates per 100,000 pop. for motor vehicle accidents among Knox County, Tenn. age groups (15-19, 20-34, 35-49, 50-64, and 65+ years): 2006-2009



Source: Knox County Hospital Discharge Data-2006 to 2009, Office of Policy, Planning, & Assessment, Tennessee Dept. of Health

As seen in Figure 4 below, teen MV accidents resulting in hospital visits reduced 17% from 2007 ($n = 777$ visits) to 2009 ($n = 645$ visits). Between 2007 and 2009, more teen females ($n = 1,168$, 56.1%) than teen males ($n = 913$, 43.9%) went to emergency rooms for MV-related accidents despite the fact that males tend to be in twice as many MV-related accidents compared to females (CDC, 2011).

Figure 4: Frequency of hospital emergency room visits (combined inpatient and outpatient visits) for motor vehicle-related injuries among Knox County, Tenn.

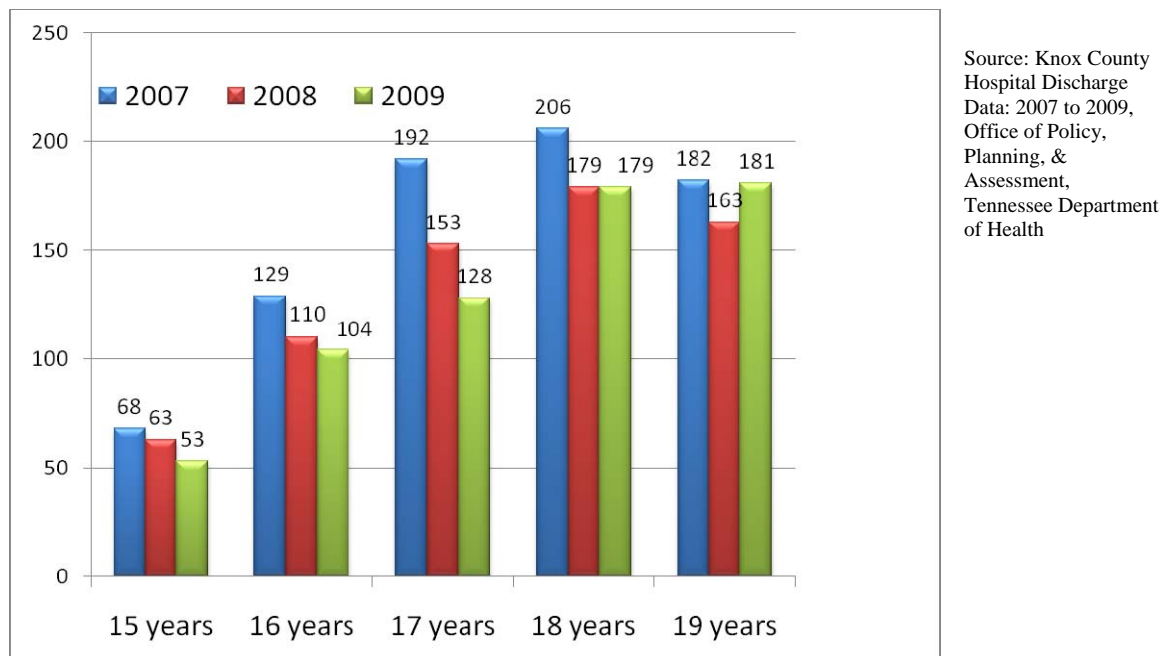


teens (aged 15-19 years) by gender: 2007-2009

Source: Knox County Hospital Discharge Data-2007 to 2009, Office of Policy, Planning, & Assessment, Tennessee Department of Health

As seen in Figure 5 below, MV emergency room visits increase with every year of age from 15 to 18 years of age and then they level out between 18 to 19 years of age among Knox County teens.

Figure 5: Frequency of hospital emergency room visits (combined inpatient and outpatient visits) for motor vehicle-related injuries among Knox County, Tenn. teens (aged 15-19 years) by age: 2007-2009



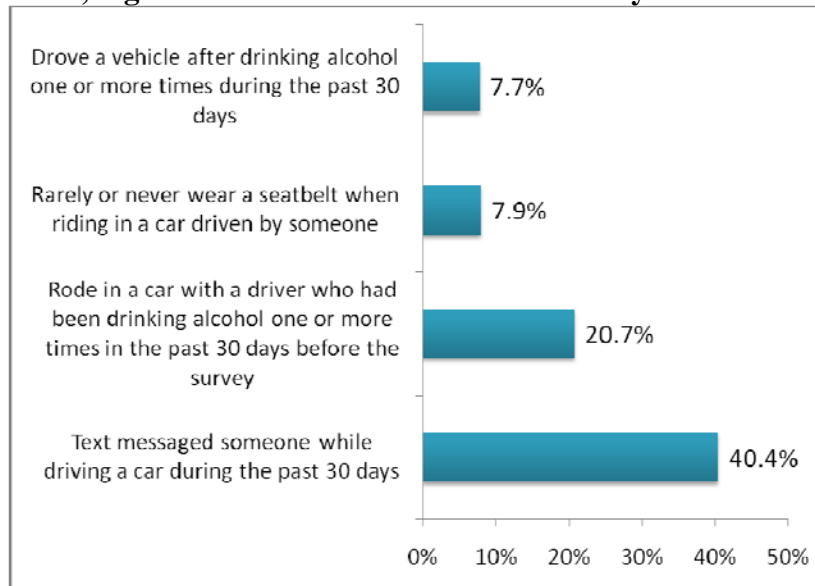
How safe are teen drivers?

A thorough discussion on the reasons why teens are involved in so many crashes lies beyond the scope of this brief report. However, it is important to remember that teens simply lack the ‘on the road’ experience that older drivers may have. Younger drivers may seem skilled at operating a motor vehicle in safe environments but that skill may not help them when they are suddenly faced with complex, rapidly changing driving situations which do not allow for indecision or poor judgment. The Transportation Research Board Subcommittee on Teen Drivers report titled *Future Directions for Research on Motor Vehicle Crashes and Injuries Involving Teenage Drivers* succinctly echoed this idea. “...a person who can dribble and shoot a basketball is not ready for a full speed game, [sic] a person who can handle a vehicle well is far from being a full-fledged driver. A great deal more understanding and ability is needed to drive competently and safely,” (TRBS, 2007; p. 9).

Besides driver inexperience, teens may be at greater risk for MV injuries due to a wide variety of factors including: failure to use seat belts, speeding (especially among males), riding as a passenger in vehicles driven by a driver who had been drinking alcohol, alcohol and other drug use before or while driving, failure to avoid driver distractions such as cell phone use and/or texting, and the number of passengers in the car (CDC, 2010). According to the CDC, three out of four teens involved in fatal motor vehicle crashes had been using alcohol and were not wearing their seatbelts (CDC, 2010;

ORSA, 2009). The 2011 Knox County Youth Risk Behavior Survey (YRBS) ($n = 921$) asked high school students in Knox County Schools about some risk behaviors related to driving; Figure 6 displays the results.

Figure 6: Motor vehicle-related risk behaviors among Knox County, Tenn. Schools, high school students: 2011 Knox County Youth Risk Behavior Survey



Source: 2011 Knox County Youth Risk Behavior Survey

Reducing Teen Accidents

Tennessee already has several laws on the books to reduce injuries and mortalities from teen MV accidents (TDOSHS, 2012). Tennessee requires all drivers to: use seatbelts (TCA 55-9-603), use helmets for motorcyclists (TCA 55-9-302), refrain from driving under the influence of drugs or alcohol (TCA 55-10-401, 55-10-403, & 55-10-416), refrain from texting (TCA 55-8-199) and specifically prohibits teens with limited driver's licenses from cell phone use. The National Highway Traffic Safety Administration suggests that driver inattention is the leading factor in most crashes and near crashes. At the time of this report, the Department for Transportation is advocating for new regulations that would prohibit or severely limit use in-vehicle communications devices such as cell phones or GPS devices for all drivers (Hachman, 2012, February 16).

One of the most promising methods to reduce teen-related motor vehicle accidents in Knox County is already on Tennessee's books. The Graduated Drivers License (GDL) Law was passed on July 1, 2001 to limit inexperienced drivers to the safest part of the day and the best possible driving environments to gain the practical experience they need to drive safely. Research indicates that GDL programs may reduce teen accidents by 20-40% (Shope, 2007).

Tennessee's graduated driver's license program requires four stages: (1) At age 15 years, learner permits may be obtained after passing a written exam and vision test. These permits require an adult, licensed driver supervisor in the car at all times. (2) At age 16, and with proof of 50 hours of driving practice, teens apply for an intermediate restricted license upon passing a behind-the-wheel driving test. They may now drive solo

but with restrictions on the time of day they may drive and the number of passengers in the car. (3) At age 17, teens apply for an intermediate unrestricted license. (4) Finally, at age 18, and following graduation (or GED), teens may obtain a full unrestricted license.

Don Lindsey, Public Affairs Director at AAA of East Tennessee with 35 years of agency experience, suggests that Tennessee's GDL is crucial in avoiding teen accidents and the 2001 Graduated Drivers License Law should continue to be promoted and enforced in Knox County to save lives and reduce injuries in the future (Lindsey, 2012). Lindsey also believes parental concern of their children should not end when the teen receives their unrestricted license. Lindsey believes the parents must continue to educate their teens on safe driving and (and helmet use for motor cycles) even after they begin to drive on their own.

Besides promoting graduated drivers license laws, AAA offers online educational resources for Tennessee families with teens who wish to learn to drive on their "Keys2Drive: The AAA Guide to Teen Driver Safety" website available at teendriving.aaa.com/TN/. In addition, AAA of East Tennessee offers a promising program called *Dare to Prepare* which uses a combination of instructors and peer counselors to educate pre-teens and their parents on the dangers and responsibilities of driving.

For more information on *Dare to Prepare* or other AAA programs on safe driving, please contact AAA of East Tennessee at 865-637-1910.

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References:

- Centers for Disease Control and Prevention. (2010). *Teen drivers: Fact sheet*. [online factsheet]. Retrieved November 22, 2011 at CDC.gov.
- Hachman, M. (2012, February 16). Feds propose ban on in-car dialing, texting and surfing. *PC Magazine*. Accessed February 21, 2012 at www.pcmag.com/article2/0,2817,2400384,00.asp.
- Lindsey, D. (2012, February 8). *Personal communication*.
- National Highway Traffic Safety Administration. (2010, September). *Traffic safety facts: Crash stats*. [Online fact sheet]. U.S. Department of Transportation. Downloaded on November 22, 2011 at: www-nrd.nhtsa.dot.gov/cats/listpublications.aspx?Id=F&ShowBy=DocType.
- National Center for Injury Prevention and Control. (2012). *Web-based injury statistics query and reporting system (WISQARS) [online interactive database]*. Centers for Disease Control and Prevention. Accessed February 6, 2012 at <http://www.cdc.gov/injury/wisqars/>.
- Office of Research, Statistics, and Analysis. (2009). *Analysis of teenage drivers in crashes in Tennessee: 2003-2008*. Tennessee Department of Safety and Homeland Security.
- Office of Research, Statistics and Analysis. (2010, September 30). *Fatal car crashes involving teen drivers in Tennessee: 1994-2009*. [Online spreadsheet]. TN Department of Safety. Accessed on November 22, 2011.
- Office of Research Statistics and Analysis. (2011, January 25). *Crash statistics by county. [Online report]*. Tennessee Department of Safety and Homeland Security. Downloaded February 7, 2012 at <http://www.tn.gov/safety/stats/CrashData/default.shtml>.
- Office of Research, Statistics, and Analysis. (2011b, February). *Tennessee traffic crash data: County rankings and statistics by emphasis area 2006-2010*. [Online report]Tennessee Department of Safety and Homeland Security. Downloaded November 22, 2011 at : www.tn.gov/safety/stats/CrashData/TrafficFatality/Rankings/CountyRankings.pdf.
- Shope, J. (2007). Graduated driver licensing: Review of evaluation results since 2002. *Journal of Safety Research*, 38(2), 165-175.
- Tennessee Department of Safety and Homeland Security. (2012). *Top ten traffic safety laws for visitors*. [Website]. Accessed February 17, 2012 at www.tn.gov/safety/top10tnlaws.shtml.
- Transportation Research Board Subcommittee on Young Drivers (2009, June). *Future directions for research on motor vehicle crashes and injuries involving teenage drivers*.