

NASN School Nurse

<http://nas.sagepub.com>

What's Really Hurting Our Kids?: The School Nurse Role in Preventing Teen Vehicle Fatalities

Robin R. Thompson

NASN School Nurse 2010; 25; 183 originally published online May 28, 2010;

DOI: 10.1177/1942602X10370367

The online version of this article can be found at:

<http://nas.sagepub.com>

Published by:



<http://www.sagepublications.com>

On behalf of:



National Association of School Nurses

Additional services and information for *NASN School Nurse* can be found at:

Email Alerts: <http://nas.sagepub.com/cgi/alerts>

Subscriptions: <http://nas.sagepub.com/subscriptions>

Reprints: <http://www.sagepub.com/journalsReprints.nav>

Permissions: <http://www.sagepub.com/journalsPermissions.nav>

Citations <http://nas.sagepub.com/cgi/content/refs/25/4/183>

What's Really Hurting Our Kids?

The School Nurse Role in Preventing Teen Vehicle Fatalities

Robin R. Thompson, RN, BSN, MEd, NCSN, Virginia

Keywords: novice driver; graduated driver licensing (GDL); blood alcohol concentration (BAC); total traffic safety culture; actively caring model; written driving agreement

The Leading Cause of Teen Deaths

Motor vehicle crashes are the single most serious public health problem facing our teen population. Vehicle crashes kill more teenagers than drugs, alcohol, suicide, and homicides combined (Insurance Institute for Highway Safety [IIHS], 2009). Every year in the United States, 5,000 to 6,000 teenagers are killed and 400,000 are seriously injured or permanently disabled (U.S. Department of Transportation, 2004). If this current trend continues, it has been estimated that more than 100,000 16- to 24-year-olds will die in vehicle crashes between 2003 and 2012 (National Research Council, Institute of Medicine, & Transportation Research Board, 2007).

Driving involves many risks and part of driving safely is being able to recognize those risks. Per mile driven, teen drivers ages 16 to 19 are four times more likely than older drivers to crash (Williams, McCart, & Geary, 2003). While it appears that our young drivers purposefully engage in risk taking behavior, the real problem is that they do not perceive the risks or recognize the dangers (McKnight

& McKnight, 2003). Teenagers' inability to detect high-risk situations is partly due to their underdeveloped visual scanning capabilities (Pradham et al., 2005). In addition, younger drivers are easily distracted (Stutts, Reinfurt, Staplin, & Rodgman, 2001), have less experience in hazard recognition, and have a sense of invulnerability (Williams, 2006). Certain driving situations place young, novice drivers at greater risk. These include driving at night (Lin & Fearn, 2003; Williams, 2003), driving with other teenage passengers, driving when unbelted (Ferguson, 2003), and driving when fatigued (Williams, 2006).

The Dangers

Driving home at night after a sporting event or an after-school job places our youngest drivers (16- and 17-year-olds) in dangerous driving situations. Drivers in this age group have a higher nighttime crash rate than any other age group (Williams & Ferguson, 2002). In 2008, 20% of teen deaths from vehicle crashes occurred between 9 p.m. and midnight (IIHS, 2009). Restricting nighttime driving is part of most Graduated Driving Licensing (GDL) laws. While our teenage drivers are generally aware of GDL restrictions, a 2007 study by The Allstate Foundation showed that 6 out of 10 parents have never heard of or are only vaguely aware of these restrictions (Allstate Foundation, 2007). The same

study found that few parents, only 16%, felt that driving at night put their teen at greater risk (Allstate Foundation, 2007).

As of June 2008, 47 states and the District of Columbia have enacted a three-stage GDL law. A complete summary of GDL is not within the scope of this article but, briefly stated, the purpose of a GDL law is to slowly introduce our young, novice drivers to different driving scenarios while controlling their exposure to high-risk driving situations. The exposure to different driving situations occurs over a period of time within a three-stage period. Stage 1 is the learner's permit; Stage 2 is the provisional license; and Stage 3 is the full license. During that time, young drivers have limits set as to nighttime driving, passenger restrictions, requirement for adult supervision, and age requirements set for each stage. This approach has proven effective in reducing crash rates (CDC, 2009). It is important to note that such laws vary from state to state and most adults are not familiar with them.

Young drivers are easily distracted and have not gained the experience necessary to judge the risks that distractions place on them (Greenberg et al., 2003). Most teens admittedly talk on cell phones, interact with passengers, change CDs, and eat and drink while driving; yet they do not believe they are distracted. This inability to recognize the true risks

associated with multitasking while driving might stem from witnessing such behaviors from adult drivers. A 2007 survey conducted by The Children's Hospital of Philadelphia and State Farm found that 94% of the teens reported seeing behaviors of teen passengers that distract the driver, yet 48% reported that they, themselves, talk on cell phones when driving (Winston et al., 2007). It is thought that this may be due to the fact that for this age group those activities are the norm and they rarely experience a negative consequence from such actions. Therefore, the perception of the risk is decreased.

As mentioned, most states' GDL laws restrict the number of teenage passengers a young driver can transport because of the additional distractions it creates for a teenage driver. Adding just one friend in the car increases a teenager's chance of crashing by 40% as opposed to driving alone and with two friends the risk increases to 80% (Williams et al., 2003). Peer pressure, a propensity towards risky behavior, and inexperience come together to create "the perfect storm" when a group of teens are in a car together (Allen & Brown, 2008).

Interestingly, the parents of teenage drivers also fail to realize the risk of having friends in the car with their teen. Only 45% of parents surveyed felt it increased crash risk (Allstate Foundation, 2007). The danger also exists for the teenage passengers. In 2008, 63% of teenage passenger deaths occurred when the driver of the car was a teenager (IIHS, 2009). These statistics demonstrate the risks associated with teens driving together to and from school, as well as the dangers for schools that have open-campus lunch policies, where groups of teens drive away from school to eat (National Research Council Committee on School Transportation Safety, 2002; Stone & Runyun, 2005).

Compared with other age groups, teens have the lowest rate of seat belt use. In 2005, 10% of high school students reported they never or rarely wear seat belts when riding with someone else. Male high school students (12.5%) were

more likely than female students (7.9%) to never or rarely wear a seat belt (CDC, 2008). In a study of teenaged drivers who were observed arriving at school, only 62% of drivers and 47% of their passengers were wearing seatbelts (Williams et al., 2003).

Sleep deprivation and fatigue-related crashes are more common in young people and pose a significant risk for novice drivers (Williams, 2006). Being awake for 18 hours produces impairment equal to a blood alcohol concentration of 0.05 and 0.10 after 24 hours; 0.08 is considered legally intoxicated (Williamson & Feyer, 2000). Early start times at high schools, after-school activities, part-time jobs, and academic demands all make for a long day for teens. In addition, teenagers have a biological tendency to stay up later at night and sleep longer in the morning. It is well known that the average teen does not get the recommended nine hours of sleep each night. Hence, that "good kid" who was up late writing a paper or studying for an exam is the same "good kid" driving to school very early the next morning. According to the National Sleep Foundation 68% of 12th graders reported driving while drowsy within the past year (Carskadon, Mindell, & Drake, 2006).

Many over-the-counter and prescription medications negatively affect a teen's driving ability. Some of the side-effects of these drugs can cause excessive drowsiness. Students taking antihistamines, stimulants, or analgesics are all at risk. A 50-mg dose of diphenhydramine has been shown to have a greater effect on driving performance than a blood alcohol concentration of 0.10 (Couper & Logan, 2004).

How School Nurses Can Help

Health care providers working with teens and parents are in prime positions to make a positive impact on this issue. Dr. Lawrence D'Angelo, from Children's National Medical Center, has stated that health care providers are not providing preventive messages to adolescents and their parents. Such preventive messages have proven effective in other areas of health promotion and wellness, such as

smoking cessation and drug and alcohol avoidance. D'Angelo stated that driving safety is not a prominent topic during annual exams. Providers discuss drugs and alcohol 82.5% of the time, but mention driving risks, such as night driving and driving distractions, only 12% and 7% of the time, respectively (D'Angelo, 2006).

Once school nurses understand why and how teen driving fatalities are occurring, they can address risks and help dispel common misconceptions. For example, teens and parents alike believe alcohol to be a major contributor to teen driving fatalities, when in reality it is only the cause in 25% of such fatalities (CDC, 2009; Senserrick, 2006). In fact, 51% of teens surveyed by the Allstate Foundation believed alcohol to be the leading cause of teen driving fatalities (Allstate Foundation, 2005). The dangers of alcohol and driving are widely known amongst all age groups of society due to beneficial and successful social media campaigns. Therefore, many teens and parents believe that, as long as they don't drink and drive, they will be safe. School nurses and others need to work hard to increase awareness and change perceptions of all the reasons for the leading cause of teen deaths.

Nurses have always led the way in wellness and health promotion efforts. School nurses are frequently involved in drug, alcohol, and suicide prevention efforts, as well as bullying and violence deterrence. Becoming involved in addressing the number one cause of teen death and injury for all school-age children (CDC, 2009) is possible as well. School nurses, especially those serving adolescent populations, can spearhead efforts to educate teens and parents about the leading cause of death and injury for this age group. According to the National Research Council's 2007 workshop, *Preventing Teen Motor Crashes*, "Health care providers and educators are important, but undeveloped assets who are in a position to guide teens and parents" (p. 45). School nurses can lead efforts to present the risks associated with teenage driving with teens and parents. They can also aid school administrators in taking

positive steps to lessen the risks at after-school events, such as dances and sporting activities, in which our teens will be driving at night and usually together.

School Nursing Interventions

Helping parents and teens understand the developmental and cognitive differences of the adolescent is helpful to the school nurse in interventions. The prefrontal cortex of the brain is still developing until the mid-20s (Keating, 2007). This area governs executive functioning—vital to impulse control, decision making, understanding consequences, organizing thoughts, and maintaining attention and focus. In other words, the fully developed prefrontal cortex includes everything we need to be safe drivers. Therefore, those seemingly purposeful risk taking behaviors in reality are just because they “don’t get it” yet. When stress, sleep deprivation, passengers, music, cell phones, and hormonal changes are added to the equation, the outcome is all too frequently tragic.

School nurses can help create a culture of traffic safety within schools. Dr. Scott Geller, a behavioral scientist from Virginia Tech University, has stated that through behavioral science methods, society’s traffic safety orientation can be changed to one in which everyone helps prevent the tragic consequences of vehicle crashes. This approach applies behavior-based safety principles and an actively caring model to shift the culture from “risk-tolerant to risk-adverse and from reactive to proactive in pursuit of safety” (Geller & Dula, 2007, p. 2). This may seem unrealistic, but it is necessary if traffic safety is to be elevated to a true societal value.

Teens should be encouraged to exhibit a kindred sense of responsibility for the welfare of others. They can then not only monitor and change their own behavior, but support peers in doing the same. Empowering teens to speak up when someone else is driving in a way that makes them uncomfortable is one important step since teens admit



Author and *The ART of Driving* founder Robin Thompson posing with teen drivers.

that their friends are a big influence on them. When one takes into account that over 50% of teens said they would not feel comfortable speaking up in that type of situation (Allstate Foundation, 2005), helping them to do so would go a long way in preventing tragedies.

Teens can be encouraged to use positive peer pressure to keep each other safe and to actively care for one another. Safety becomes a priority and prevention is everyone’s responsibility. Geller pointed out that referring to car crashes as “‘accidents’ underscores the common perception that” such incidents are largely out of one’s personal control and they are unavoidable (Geller & Dula, 2007, p. 3). In reality, they are largely preventable. He goes on to point out that traffic safety should be taught to children and adults, from the earliest years through adulthood. In addition, Geller explained that when “actively caring for others . . . good citizenship becomes associated with safe driving, and safety becomes a value, and values always take precedence over goals.” (Geller & Dula, 2007, p. 5).

School nurses are familiar with behavior plans for students that target specific, observable behaviors that one hopes to modify. Those plans usually involve

some form of positive reinforcement. The same behavioral science principle holds true for changing behaviors in our teen drivers. For example, you notice many of your high school students are not wearing seat belts as they pull out of the school parking lot. Students interested in promoting safe driving practices could stand outside at dismissal handing out Smartie candies to those buckled up and Dum-Dum Pop suckers to those who are not. That would be a nonintrusive way to reinforce positive behavior and for peers to say, “I care about your safety.”

If you work in an elementary setting, you know most of your students know to “stop, drop, and roll” and to wear a helmet when riding a bicycle. Information on such topics usually goes home to parents as well. But are they just as familiar with the fact that “everyone in a car should always wear a seatbelt” or that they should “never distract a driver when he is driving”? Have parents of young, elementary students been told to say “please don’t bother mommy when she is driving, I have to pay attention to the road” or “I’ll hand you the book when I can pull off the road”? This will help plant the seed early on that distracted driving is dangerous and a driver must

give his or her full attention to the road. Modeling such behavior is critical if a culture of traffic safety is to develop.

School nurses who understand the issue, know the facts, and are aware of parent and teen attitudes can positively impact this public health crisis. Parents play a pivotal role and are the most important factor when it comes to keeping their teens safe. Eighty-nine percent of teens surveyed said their parents are influential in encouraging safe driving (Allstate Foundation, 2005). School nurses can empower parents to take an active role in supervising their teens' driving experiences by monitoring and restricting their teen's driving, maintaining an open dialogue, setting a good example when they themselves are driving, and developing written driving agreements with their young, novice drivers. Dr. Bruce Simons-Morton, of the National Institutes of Health, stressed the importance of parental involvement. He stated that teens do better when clear limits are set, consequences spelled out, and written driving agreements are in place (Simons-Morton & Ouimet, 2006). This is a great topic for a Parent-Teacher Association (PTA) meeting and a good topic to work into conversations with teens that come into your clinic.

Encouraging parents to talk to their children about driving safety is a simple, but important task for school nurses. Just as the 2005 Allstate Foundation survey showed that parents are most influential in their child's driving behaviors, the 2007 Allstate Foundation survey showed that parents talk to their children about drugs, alcohol, and unsafe sex at a much earlier age than they discuss safe driving. Teens are listening to us, even if we don't think they are. The question is, are we talking to them?

Teenagers significantly influence one another's actions. With the right guidance we can help teens have a positive impact on each other's driving. Teens can be encouraged to look out for one another, speak up when they see unsafe driving behaviors, and be both safer drivers and smarter passengers. Peer-led education efforts could help alter teen perceptions and attitudes. Let

them know that speaking up, although uncomfortable, may make the difference in whether they and their friends make it home safe or not.

School nurses should consider the following interventions:

- Encourage parents and staff to discuss traffic safety with students.
- Encourage parents and staff to be role models for safe driving practices.
- Know the GDL in your state and share that information with parents.
- Discuss with parents and students the effects of sleep deprivation on driving.
- Discuss with parents and students how certain medications impact driving ability.
- Spearhead efforts to increase awareness about the effects of distracted driving and seatbelt use.
- Reinforce with teens the danger of driving together and why that increases their chances of having a fatal crash.
- Discuss with teens, parents, and school administrators the increase risk of nighttime driving.
- Encourage the use of written driving agreements between parents and their teen drivers. Involve the PTA with this effort.
- Observe at dismissal. Are younger children buckled in and is that message given to parents in the carpool line? Are teens piling into vehicles together?
- Pay special note to students who have conditions, such as attention disorders or diabetes, and discuss the potential risks those conditions may have for them as drivers.
- Talk with administrators, driver education teachers, and school safety officers about practices that could be put in place to increase traffic safety. This could include tying in parking privileges for teen drivers with safe driving practices, delaying school start times, and reviewing off-campus lunch policies.
- Talk with the athletic director about safety issues regarding busing versus team members driving together to sporting events and practice sessions.

- Encourage students to "find their voices" and speak up when faced with unsafe driving situations.

As health care providers, we must ask ourselves why we have not taken as active a role in this public health problem as we have in others. Perhaps this issue is mistakenly viewed as inevitable when it is actually very much preventable. If a disease were claiming 6,000 teenage lives every year, what would we do? We might walk for a cure, fund raise, or march in Washington, D.C. As former National Highway Traffic Safety Administration head Jeffrey Runge, MD, said, "If we had any other disease that was wiping out our teenagers at the rate of thousands per year, there would be no end to what we would do as a society to stop that" (Stafford, 2005, para. 15). If anyone can stop this public health crisis, it is school nurses. ■

References

- Allen, J. P., & Brown, B. B. (2008). Adolescents, peers, and motor vehicles: The perfect storm? *American Journal of Preventive Medicine*, 35(Suppl. 3), S289-S293.
- Allstate Foundation. (2005). *Chronic: A report on the state of teen driving*. Retrieved from <http://www.allstate.com/content/refresh-attachments/citizenship/chronic.pdf>
- Allstate Foundation. (2007). *Research findings: Parents and teen driving safety quantitative study*. Retrieved from http://www.allstate.com/content/refresh-attachments/citizenship/Teen_driver_Parent_Survey_Findings_2007.pdf
- Carskadon, M. A., Mindell, J. A., & Drake C. (2006). *2006 Sleep in America poll: Teens*. Washington, DC: National Sleep Foundation. Retrieved from http://www.sleepfoundation.org/_content/hottopics/2006_summary_of_findings.pdf
- Centers for Disease Control and Prevention. (2008, April 14). *Youth online: comprehensive results*. Retrieved from <http://apps.nccd.cdc.gov/yrbss/CategoryQuestions.asp?cat=1&desc=Unintentional%20%09Injuries%20and%20Violence>
- Centers for Disease Control and Prevention. (2009, August 20). *Web-based injury statistics query and reporting system*. Retrieved from <http://www.cdc.gov/injury/wisqars/index.html>

- Couper, F., & Logan, B. (2004). *Drugs and human performance fact sheet: Diphenhydramine* (DOT HS 809 725). Washington, DC: National Highway Traffic Safety Administration.
- D'Angelo, L. J. (2006, May). *Behind the wheel: A health care provider looks a teen driving*. Presentation for the Workshop on Contributions from the Behavioral and Social Sciences in Reducing and Preventing Teen Motor Crashes, National Academies, Washington, DC. Retrieved from http://www.bocvf.org/dangelo_presentation.pdf
- Ferguson, S. A. (2003). Other high-risk factors for young drivers-how graduated licensing does, doesn't, or could address them. *Journal of Safety Research, 34*(1), 71-77.
- Geller, E. S., & Dula, C. S. (2007). *Creating a total safety traffic culture*. Washington, DC: AAA Foundation for Traffic Safety. Retrieved from <http://www.aaafoundation.org/pdf/DulaGeller.pdf>
- Greenberg, J., Tijerina, L., Curry, R., Artz, B., Cathey, L., Kochhar, D., . . . Grant, P. (2003). Driver distraction: Evaluation with event detection paradigm. *Transportation Research Record: Journal of the Transportation Research Board, 1843*, 1-9.
- Insurance Institute for Highway Safety, Highway Loss Data Institute. (2009). *Fatality Facts 2008*. Retrieved from http://www.iihs.org/research/fatality_facts_2008/teenagers.html
- Keating, D. (2007). Understanding adolescent development: Implications for driving safety. *Journal for Safety Research, 38*, 147-157.
- Lin, M.-L., & Fearn, K. T. (2003). The provisional license: nighttime and passenger restrictions—A literature review. *Journal of Safety Research, 34*(1), 51-61.
- McKnight, J. A., & McKnight, S. A. (2003). Young novice drivers: careless or clueless? *Accident Analysis and Prevention, 35*, 921-925.
- National Research Council Committee on School Transportation Safety. (2002) *The relative risks of school travel: A national perspective and guidance for local community risk assessment*. Washington, DC: National Academies Press.
- National Research Council, Institute of Medicine, & Transportation Research Board. (2007). *Preventing teen motor crashes: Contributions from the behavioral and social sciences, workshop report*. Washington, DC: National Academies Press. Retrieved from <http://www.noys.org/Preventing%20Teen%20Motor%20Crashes.pdf>
- Pradhan, A. K., Hannel, K. R., Deramus, R., Pollatsek, A., Noyce, D. A., & Fisher, D. L. (2005). Using eye movements to evaluate effects of driver age on risk perception in a driving simulator. *Human Factors, 47*, 840-852.
- Senserrick, T. M. (2006). Reducing young driver road trauma: Guidance and optimism for the future. *Injury Prevention, 12*(1), 56-60.
- Simons-Morton, B., & Ouimet, M.C. (2006). Parent involvement in novice teen driving: A review of the literature. *Injury Prevention, 12*(1), 30-37.
- Stafford, R. (2005, July 8). The perils of teen driving: A painful lesson for one family: 16-year-olds may be too young to drive. *Dateline NBC*. Retrieved from http://www.msnbc.msn.com/id/8501174/ns/dateline_nbc/
- Stone, L. M. & Runyun, C. W. (2005). High school off-campus lunch policies and adolescent motor vehicle crash risks. *Journal Adolescence Health, 36*, 5-8.
- Stutts, J. C., Reinfurt, D. W., Staplin, L. W., & Rodgman, E. A. (2001). The role of driver distraction in traffic crashes. Chapel Hill, NC: University of North Carolina Highway Safety Research Center, prepared for the AAA Foundation for Traffic Safety. Retrieved from <http://www.aaafoundation.org/pdf/distraction.pdf>
- U.S. Department of Transportation, National Highway Traffic Safety Administration. (2004). *Traffic safety facts: 2004 data—Young drivers* (DOT HS 809 911). Washington, DC: National Highway Traffic Safety Administration, National Center for Statistics and Analysis.
- Williams, A. F. (2003). Teenage drivers: patterns of risk. *Journal of Safety Research, 34*(1), i5-i15.
- Williams, A. F. (2006). Young driver risk factors: successful and unsuccessful approaches for dealing with them and an agenda for the future. *Injury Prevention, 12*(1), i4-i8.
- Williams, A. F., & Ferguson, S. A. (2002). Rationale for graduated licensing and the risks it should address. *Injury Prevention, 8*(2), ii9-ii14.
- Williams, A. F., McCart, A. T., & Geary L. (2003). Seatbelt use by high school students. *Injury Prevention, 9*(1), 25-28.
- Williamson, A. M., & Feyer, A.-M. (2000). Moderate sleep deprivation produces comprehensive cognitive and motor performance impairments equivalent to legally prescribed levels of alcohol intoxication. *Occupational and Environmental Medicine, 57*, 649-655.
- Winston, F. K., Durbin, D. R., Ginsburg, K. R., Kinsman, S. B., Senserrick, T. M., Elliott, M. R., . . . Hill, S. D. (2007). *Driving: Through the eyes of teens* (Research Report of The Children's Hospital of Philadelphia and State Farm). Philadelphia: The Center for Injury Research and Prevention at The Children's Hospital of Philadelphia. Retrieved from http://stokes.chop.edu/programs/injury/files/PCPS_Reports/1289teen.pdf

**Robin R. Thompson
RN, BSN, MED, NCSN**

*School Nurse
William Ramsay Elementary
Alexandria, VA*

Robin has been a school nurse for Alexandria City Public Schools for 18 years. She is also the founder and director of *The ART of Driving* (www.theartofdriving.org), a nonprofit foundation offering educational awareness programs for teen drivers and their parents. The program won the 2009 Governor's Transportation Safety Award for Youth Traffic Safety for the state of Virginia, as well as Kaiser Permanente's National Community Service Award. Robin travels extensively presenting programs to schools, civic organization, and youth groups. Robin founded the program in memory of her daughter, Ashley Renee, who died in a single-vehicle crash in 2003 at the age of 16. Robin can be contacted at Robin@theartofdriving.org.