Safety: Texting while Driving

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The number of wireless devices in the United States surpasses the US child and adult population combined: close to 396 million wireless devices are used, and most (262 million) are smartphones. As smartphones have become more ubiquitous, text messaging has grown in acceptance. More than 70% of wireless mobile device users text at least once per day. However, among American teens, the prevalence is significantly higher, with 1 in 3 sending greater than 100 text messages per day. Moreover, recent trends indicate text messaging to be the primary method of communication between teens, thereby making texting while driving (TWD) a growing cause for concern.

Teen drivers are novice drivers and are already at heightened risk for motor vehicle accidents (MVAs) and motor vehicle–related deaths. On average, 6 teens die every day from MVAs in the United States, making it the leading cause of death in this age range. Novice teen drivers lack experience and ability to perform complex driving tasks, have lower proficiency in detecting and responding to hazards, and are more likely to engage in risk-taking behaviors on the road.

Teen drivers also represent the highest proportion of distracted drivers. Distractions occur when drivers move their attention from the task of driving to focusing on another activity. Distracted driving contributes to approximately 10% of all motor vehicle fatalities and 17% of all motor vehicle injuries in the United States. Among teens, TWD is a growing contributor to distracted driving, and it is especially dangerous because it involves 3 types of distractions—visual, manual, and cognitive attention.

Texting while driving has been associated with a fourfold increase in MVAs and results in longer breaking times, slower driving speeds, and an increase in speed variability and lane positioning. In addition, findings have shown that teens who TWD exhibited prolonged and frequent glances away from the road, up to 400% more time compared with when they are not texting. Glances away from the road that exceed 1.6 to 2.0 seconds are known to increase the risk of an MVA, and typing a simple message, "I'm on my way home," takes 37 seconds on average while driving.

Special consideration should be given to teen drivers with attention-deficit/hyperactivity disorder (ADHD). Teens with ADHD are at higher risk for driving impaired if TWD compared with teens who do not have ADHD. In simulation studies, texting was found to triple the risk of leaving one's own lane if the teen was diagnosed as having ADHD compared with doubling the risk for non-ADHD teens.

Also, TWD is associated with other risky driving behaviors. For example, teens who engage in TWD have a fivefold increase in odds of also driving while drinking alcohol and are more likely to be a car passenger with a driver who has been drinking alcohol. Teens engaging in TWD also had greater odds of wearing a seatbelt irregularly.

Texting while Driving and Other Risky Motor Vehicle Behaviors among US High School Students. Olsen EO, Shults RA, Eaton DK. *Pediatrics.* 2013;131(6):e1708–e1715

A Meta-analysis of the Effects of Texting on Driving. Caird JK, Johnston KA, Willness CR, Asbridge M, Steel P. *Accid Anal Prev.* 2014;71;311–318

Adolescent Cellphone Use While Driving: An Overview of the Literature and Promising Future Directions for Prevention. Delgado MK, Wanner KJ, McDonald C. *Media Commun.* 2016;4(3):79–89

Preventing Texting while Driving: A Statement of the American College of Preventive Medicine. Sherin KM, Lowe AL, Harvey BJ, et al. *Am J Prev Med.* 2014;47(5):681–688

Nearly half of teens report TWD, and among those reporting TWD, nearly 1 in 4 teens engaged in TWD every day. Although teens often recognize TWD as dangerous, they fear being disconnected from their peers and feel pressure to rapidly respond. Other factors used in decision making regarding whether to TWD include driving conditions, purpose of text, and the relationship with the person texting. Furthermore, parental driving behavior influences teen driving behavior. Approximately 3 of 4 teens have seen their parents engaging in TWD and report it to be common among peers. Thus, parent modeling and normative beliefs of TWD play an important role in determining teen behavior.

State legislation prevention strategies have been developed to aid in reducing the rate of TWD. Since the implementation of state laws in 2007, TWD was lowest in states with universal texting bans. Likewise, in states that universally banned TWD and made it a primary offense, there was an 8% decrease in fatalities. However, there was a loss of effect after 3 months of implementation; this trend toward low effectiveness is thought to be the result of drivers not believing the law was enforced.

To improve awareness, mass media campaigns, such as the National Safety Council's implementation of "Distracted Driving Awareness Month" in April and the Texas Department of Transportation's spearheading of "Teens in the Driver's Seat," have focused on messaging to encourage teens to remove distractions while driving. Also, phone carrier AT&T and the Governors Highway Safety Association partnered to support the media campaign "It Can Wait." Despite limited literature on the effectiveness of such efforts, these strategies can serve an important role in shifting cultural norms on TWD and begin a discourse on safe driving measures. Studies investigating teen perception of TWD have shown that messages focused on the benefits of abstaining from TWD are more effective than strategies highlighting the dangers of TWD.

Additional strategies such as smartphone apps have been marketed as tools for reducing TWD. These apps include "Live2Text" that blocks incoming texts and calls while driving and sends a message that the driver cannot respond now. Other apps use the global positioning system (GPS) to eliminate the phone's ability to text if the car is moving at a speed of approximately 10 mph or greater. Currently, there is a paucity of research examining the effects of smartphone apps on TWD.

Community partnerships between hospitals and schools in producing peer-led educational programs to reduce TWD in teens have demonstrated a significant decline in TWD with short-term follow-up. Although labor-intensive, interventions capitalizing on personal relationships with trusted authorities in teens' lives to provide accurate advice on TWD, coupled with reinforcement of safe driving messages have shown promise for reducing TWD compared with driver-centered approaches.

The pediatrician, an often trusted authority for teens, can also play a vital role in preventing TWD. The American Academy of Pediatrics recommends that pediatricians discourage distractions while driving, including the use of a mobile device. Although pediatricians are more likely to counsel teens and their families on at least 1 driver safety topic compared with other specialties, TWD is not discussed as frequently as seatbelt and alcohol use. In fact, less than one-quarter of pediatricians report always or almost always addressing TWD with teens and/or their parents.

Pediatricians have an opportunity to engage parents in a discussion on modeling appropriate behavior concerning TWD. Pediatricians can improve parental awareness of high-risk situations for teen drivers and empower parents to develop a parent-teen driving agreement that delineates parental expectations and limits on TWD. Such agreements, as proposed by the Centers for Disease Control and Prevention (CDC), encourage bidirectional communication and active participation from parents and teens in establishing safe practices for teen drivers. Anticipatory guidance that promotes self-efficacy for teens can also aid in reducing TWD in this age group. Combining multiple strategies for a comprehensive multipronged approach to prevent TWD among teens may lead to the best outcomes in changing behavior and improving the safety of teen drivers.

Note. The views expressed in this article are those of the authors, and no official endorsement by the Agency for Healthcare Research and Quality or the Department of Health and Human Services is intended or should be inferred.

COMMENT: This *In Brief* addresses a critically important issue that has emerged over the past few years with the tremendous increase in use of social media. The scope of the problem of TWD may be underestimated because many of the studies have obtained the data by reliance on adolescent self-report. Although more research needs to be conducted to evaluate effectiveness of interventions, it seems that a multipronged preventive approach may be beneficial. One strategy may include asking the question "Do you text and drive?" at all physician visits, including

health maintenance, acute care, and emergency department visits. This would help highlight and perhaps reinforce in the consciousness of adolescents the importance of this issue. Parents serve as role models, and because adolescents will often emulate their parents' behaviors, addressing this issue to parents is also needed. Although studies show that adolescents recognize the dangers with TWD, they still report participating in the behavior. As with other injury prevention strategies, it seems that a focus on why abstaining from TWD is beneficial is a more powerful approach than the focus on harm. For some adolescents, compulsive texting may be a behavioral addiction and may need to be addressed. Other innovative strategies that need further evaluation include peer to peer education, school-based interventions, messages on social media, and capabilities to directly observe behaviors while driving.

– Janet R. Serwint, MD
Associate Editor, *In Brief*

CME Quiz Clarification

An astute reader noted a need for clarification in the CME quiz for the May 2017 review "Screening for Poverty and Poverty-Related Social Determinants of Health" (Berman RS, Patel MR, Belamarich PF, Gross RS. *Pediatric Rev.* 2018; 39(5):235-246, DOI: 10.1542/pir.2017-0123). The child featured in the question 5 stem has been changed from a 1-year-old-boy to a 7-year-old boy to more closely coincide with the answer options presented. The online version of the quiz has been updated, and a clarification notice has been posted with the online version of the article. The journal appreciates the clarification.

CME Quiz Correction

An error appeared in the print version of the CME quiz for the June 2018 review "*Staphylococcus aureus*" (Ondusko DS, Nolt D. *Pediatr Rev.* 2018;39(6):287-298, DOI: 10.1542/pir.2017-0224). In question 5, the platelet count should read "85 x $10^3\mu$L (85 x 10^9/L) …" The online version of the quiz is correct, and a correction notice has been posted with the online version of the article. The journal regrets the error.

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