

May 2018 Update from the Field: Rural Roadway Safety

Prevalence of Alcohol Impairment and Odds of a Driver Injury or Fatality in On-Road Farm Equipment Crashes. Harland KK, Bedford R, Wu H, Ramirez M. *Traffic Injury Prevention*. 01 Mar 2018;19(3):230-234.

Objective: The objective of this article was to estimate the prevalence of alcohol impairment in crashes involving farm equipment on public roadways and the effect of alcohol impairment on the odds of crash injury or fatality. **Methods:** On-road farm equipment crashes were collected from 4 Great Plains state departments of transportation during 2005–2010. Alcohol impairment was defined as an involved driver having blood alcohol content of ≥ 0.08 g/100ml or a finding of alcohol impairment as a driver contributing circumstance recorded on the police crash report. Injury or fatality was categorized as (a) no injury (no and possible injury combined), (b) injury (nonincapacitating or incapacitating injury), and (c) fatality. Hierarchical multivariable logistic regression modeling, clustered on crash, was used to estimate the odds of an injury/fatality in crashes involving an alcohol-impaired driver. **Results:** During the 5 years under study, 3.1% (61 of 1971) of on-road farm equipment crashes involved an alcohol-impaired driver. One in 20 (5.6%) injury crashes and 1 in 6 (17.8%) fatality crashes involved an alcohol-impaired driver. The non-farm equipment driver was significantly more likely to be alcohol impaired than the farm equipment driver (2.4% versus 1.1% respectively, $P = .0012$). After controlling for covariates, crashes involving an alcohol-impaired driver had 4.10 (95% confidence interval [CI], 2.30–7.28) times the odds of an injury or fatality. In addition, the non-farm vehicle driver was at 2.28 (95% CI, 1.92–2.71) times higher odds of an injury or fatality than the farm vehicle driver. No differences in rurality of the crash site were found in the multivariable model. **Conclusion:** On-road farm equipment crashes involving alcohol result in greater odds of an injury or fatality. The risk of injury or fatality is higher among the non-farm equipment vehicle drivers who are also more likely to be alcohol impaired. Further studies are needed to measure the impact of alcohol impairment in on-road farm equipment crashes.

Development of a Supplementary Driver Education Tool for Teenage Drivers on Rural Roads.

Kumfer W, Liu H, Wu D, Wei D, Sama S. *Safety Science*. 26 Jun 2017;98:136-144.

Introduction: Teenagers are at greater risk than any other drivers on the highway system in the United States, especially in states like Texas with large rural road networks. Rural roads present many unique safety concerns that are traditionally unexplored in standard driver education curricula. In fact, many studies have actually indicated that driver education is very limited in use and efficacy. However, national goals for driver education envision a more comprehensive continuing education process, and computer-based education tools may be one supplementary method to address gaps in young driver training.

Methods: The research team developed a flash-based computer education tool covering topics relating to driver behavior and rural roads and tested the efficacy of this tool in two rural-serving high schools in West Texas by comparing the results of pre- and post-intervention surveys using linear regression, analysis of variance, and logistic regression. **Results:** The results were promising, with students who used the intervention scoring higher on both a driver behavior scale and rural safety scale. All models indicated that students who took the intervention, even without being previously licensed, demonstrated greater knowledge and awareness. **Conclusions:** The models demonstrated the viability of this type of intervention tool for inclusion in a phased driver education program and for addressing the lack of rural road safety knowledge. Practical applications: The computer-based-training program developed in this project supports the potential efficacy of supplemental pre-licensure computer-based education tools for improving teen driver knowledge and safety awareness and fills a gap for rural road safety education.

Rural Transportation: Challenges and Opportunities. Henning-Smith C, Evenson A, Corbett A, Kozhimannil K, Moscovice I. University of Minnesota Rural Health Research Center. Nov 2017.

Available from: <http://rhrc.umn.edu/2017/11/rural-transportation-challenges-and-opportunities/>

Purpose: Transportation, as it relates to health and health care, is widely acknowledged to have unique features in rural communities, but there is limited research on specific challenges and potential policy interventions to alleviate them. This policy brief uses survey data from 113 key informants across all fifty states to describe challenges and opportunities related to rural transportation. **Key Findings:** 113 key informants from all fifty states reported rural transportation challenges across six distinct, interrelated themes: infrastructure (mentioned by 63%), geography (46%), funding (27%), accessibility (27%), political support and public awareness (19%), and sociodemographics (11%). Most key informants highlighted problems across multiple themes, illustrating the complexity of meeting the transportation needs of rural residents. Improving rural access to transportation services is, in the opinion of nearly all key informants, an area of critical importance to rural populations. Policy interventions should aim to improve awareness of existing transportation services; address accessibility for all riders; share best practices between states, communities, and health care facilities to improve efficiency; and build partnerships that cross traditional organizational and sector boundary lines.