September Update from the Field 2020

Hello all,

2020 has certainly been a challenging year and our thoughts are with all of those who have been impacted by the derecho and other adverse weather. As we look toward harvest, all-terrain vehicle (ATV) usage may increase. We wanted to take the opportunity to provide some recent literature about ATV usage and injuries rates relevant to rural areas. Please reach out with questions, comments or requests for the full article at: smcmilln@uiowa.edu

Thank you,

Stephanie McMillan

Assessing the Emergent Public Health Concern of All-Terrain Vehicle Injuries in Rural and Agricultural Environments: Initial Review of Available National Datasets in the United States

Weichelt, Bryan, Serap Gorucu, Charles Jennissen, Gerene Denning, and Stephen Oesch. "Assessing the emergent public health concern of all-terrain vehicle injuries in rural and agricultural environments: initial review of available national datasets in the United States." *JMIR public health and surveillance* 6, no. 2 (2020): e15477.

Abstract: Background: Injuries related to the operation of off-road vehicles (ORVs), including all-terrain vehicles (ATVs), continue to be a significant public health concern, especially in rural and agricultural environments. In the United States alone, ATVs have played a role in thousands of fatalities and millions of injuries in the recent decades. However, no known centralized federal surveillance system consistently captures these data. Traditional injury data sources include surveys, police reports, trauma registries, emergency department data, newspaper and online media reports, and state and federal agency databases. **Objective:** The objectives of this study paper were to (1) identify published articles on ORV-related injuries and deaths that used large databases and determine the types of datasets that were used, (2) examine and describe several national US-based surveillance systems that capture ORV-related injuries and fatalities, and (3) promote and provide support for the establishment of a federally-funded agricultural injury surveillance system. **Methods:** In this study, we examined several national United States–based injury datasets, including the web-based Ag Injury News, the Fatality Analysis Reporting System, databases compiled by the US Consumer Product Safety Commission, and the National Fatality Review Case Reporting System. **Results:** Our review found that these data sources cannot provide a complete picture of the incidents or the circumstantial details needed to effectively inform ORV injury prevention efforts. This is particularly true with regard to ORV-related injuries in agricultural production. **Conclusions:** We encourage the establishment of a federally funded national agricultural injury surveillance system. However, in lieu of this, use of multiple data sources will be necessary to provide a more complete picture of ORV- and other agriculture-related injuries and fatalities.

The Effect of All-Terrain Vehicle Crash Location on Emergency Medical Services Time Intervals

Wubben, Brandon M., Gerene M. Denning, and Charles A. Jennissen. "The effect of all-terrain vehicle crash location on emergency medical services time intervals." *Safety* 5, no. 4 (2019): 73.

Over 100,000 all-terrain vehicle (ATV)-related injuries are evaluated in U.S. emergency departments each year. In this study, we analyzed the time intervals for emergency medical services (EMS) providers responding to ATV crashes in different location types. Data from the Iowa State Trauma Registry and a statewide ATV crash/injury database was matched with Iowa EMS Registry records from 2004–2014. Ground ambulance responses to 270 ATV crashes were identified, and response characteristics and time intervals were analyzed. Off-road crashes had a longer median patient access interval ($p < 0.001$) and total on scene interval ($p = 0.002$) than roadway crashes. Crashes in remote locations had a longer median patient access interval ($p < 0.001$) and total on scene interval ($p < 0.001$), but also a longer median on scene with patient interval ($p = 0.004$) than crashes in accessible locations. Fifteen percent of remote patient access times were >6 min as compared to 3% of accessible crashes ($p = 0.0004$). There were no differences in en route to scene or en route to hospital time. Comparisons by location type showed no differences in injury severity score or number of total procedures performed. We concluded that responding EMS providers had an increased length of time to get to the patient after arriving on scene for off-road and remote ATV crashes relative to roadway and accessible location crashes, respectively

The All-Terrain Vehicle Exposure and Crash Experiences of Iowa FFA Members

Jennissen, Charles A., Kristel Wetjen, Pam Hoogerwerf, Lauren O'Donnell, and Gerene Denning. "The All-Terrain Vehicle Exposure and Crash Experiences of Iowa FFA Members." (2019): 86-86.

Purpose: All-terrain vehicles (ATVs) continue to be popular among adolescents and are used by them for both occupational and recreational purposes, especially in rural areas. About 30% of all serious injuries due to ATVs in the state of Iowa are suffered by children <16 years of age. The objective of this study was to better understand the ATV-related exposure and crash experiences of Iowa adolescents. Methods: Attendees of the 2017 Iowa FFA Leadership Conference were surveyed at the Iowa ATV Safety Task Force booth. Data was collected with regards to when FFA members first rode an ATV as a passenger and as a driver, when they had their first ATV crash as a passenger and as a driver, the total number of ATV-related crashes they had been in, and whether they ever had to seek medical attention due to an ATV-related crash and, if so, at what age. Descriptive and comparative analyses were performed. Results: A total of 603 FFA members 12-19 years old completed the survey. The vast majority of participants (95.5%) had ridden an ATV. Nearly all reported having ridden as a passenger. Mean age at which respondents first rode as a passenger was 6.1 years, and as an operator was 8.9 years. Nearly 20% and about 30% reported having crashed on an ATV when riding as a passenger and as a driver, respectively. The mean age at which they first crashed as a passenger was 10.5 years and as a driver was 11.0 years. On average, males first drove ATVs about a year earlier than females. Both those that lived on farms or whose families owned an ATV were significantly younger when they first rode an ATV than those that lived elsewhere or did not own an ATV, respectively. Overall, one-third had been in at least one ATV crash. Males and those who lived in the country had higher percentages that had been in a crash. Over one-fifth of those in an ATV crash required getting medical attention and the mean age at the time of

their first crash that required medical attention was 11.5 years. Conclusions: Iowa FFA members reported nearly universal exposure to ATVs and commonly practice unsafe behaviors such as riding as or with a passenger. Those who lived on farms started riding on ATVs much younger on average than those who lived elsewhere, and higher percentages of those who lived in the country reported having had an ATV-related crash. Families are routinely not enforcing safe ATV practices and are allowing children to ride and drive ATVs at ages which are not developmentally appropriate and against manufacturer recommendations.