

## HEALTH RESEARCH ABSTRACT SUBMISSIONS

#34

|                                     |   |
|-------------------------------------|---|
| <b>Name *</b>                       | David Ellis   |
| <b>Email *</b>                      | <a href="mailto:david-ellis@uiowa.edu">david-ellis@uiowa.edu</a>  |
| <b>Educational Level *</b>          | Undergraduate   |
| <b>If Selected Other</b>            |   |
| <b>College *</b>                    | College of Engineering  |
| <b>Department *</b>                 | Biomedical Engineering  |
| <b>Title of Research *</b>          | ATV Safety in Iowa: A Long Way to Go!   |
| <b>Other Authors *</b>              | Gerene Denning, PhD (UI College of Medicine, Emergency Medicine)<br>Christopher Buresh, MD (UI College of Medicine, Emergency Medicine)   |
| <b>Introduction &amp; Purpose *</b> | A number of professional healthcare organizations have declared ATV-related injuries a significant public health concern, particularly among children. To date, no studies have defined the problem in Iowa, and more effective injury prevention efforts are needed nationwide. The goal of this project was to identify risk factors and mechanisms of injury for ATV-related crashes in Iowa, and to determine the effectiveness of current statewide ATV injury surveillance.   |
| <b>Experimental Design *</b>        | We created an ACCESS database combining ATV records for 2002-2007 from the Iowa Department of Transportation (DOT), the Department of Natural Resources (DNR), and the State Trauma Registry (STR). For data analysis, the Pearson's chi-square (medium to large sample size) and Fisher's Exact (small sample size) tests were used. Significance was defined as $p < 0.05$ .  |
| <b>Results *</b>                    | Males and 4-wheelers (vs. three-wheelers) were involved in a significantly higher proportion of crashes in our database relative to national data ( $p < 0.001$ ). Interestingly, drivers in crashes that occurred outside of ATV parks had a significantly lower percentage of helmet use (7.3%) relative to those inside the park (93%) ( $p < 0.001$ ). The demographics of drivers and passengers were also significantly different in our database ( $p < 0.001$ ). Specifically, the male to female ratio of drivers and passengers was 7:1 and 1:1, respectively; and the percentage of children less than sixteen was 29% and 72%, respectively. Finally, collision events accounted for a significantly higher proportion of ATV-related injuries in the DOT database (65%) relative to both the DNR (19%) and STR (17%) ( $p < 0.05$ ). |
| <b>Conclusions *</b>                | Our findings indicate that the combined database is a valuable tool for statewide retrospective ATV studies; but gaps in data also indicate a need for additional strategies and resources to more accurately document surveillance data for the purpose of ATV education, research, and injury prevention efforts.   |

|   |                                    |
|---|------------------------------------|
| Created<br><b>9 Apr 2010</b><br>12:56:49 PM | <b>129.255.1.147</b><br>IP Address |
| <b>PUBLIC</b>                               |                                    |

