**BACKGROUND**

A trauma system is an organized, coordinated approach to treating individuals who have sustained severe injuries that require rapid evaluation and transport to specific hospitals with trauma care capabilities, staff and equipment to provide the comprehensive care needed. Indiana’s trauma system is developing, and currently has components of a system, including 11 trauma centers around the state (Figure 1).

**METHODS**

Data for all trauma cases in Indiana EDs from January 1, 2013 through June 30, 2014 were obtained from the Indiana Patient Registry and were analyzed retrospectively. Data were collected for 4,373 trauma patients who were treated at the ED, of which 42,745 trauma incidents had available ED acute care disposition data.

Logistic regression modeling was performed with ED acute care disposition as the outcome variable. ED acute care disposition was dichotomized as expired or did not expire, and age, race, gender, alcohol use, trauma type and trauma center status were the independent variables. SAS 9.2 software was used during analysis.

**RESULTS**

Between January 1, 2013 and June 30, 2014 there were 42,745 trauma incidents with available ED acute care disposition data, of which 333 (0.78%) of these resulted in death. Gender, trauma type and alcohol were statistically significant, and age approached statistical significance (Table 1).

**CONCLUSIONS**

Patients that experienced penetrating trauma were 6.73 times more likely to die in the ED than those with blunt trauma. Penetrating injuries may have higher morbidity and mortality, as these injuries frequently involve large-caliber, high-velocity weapons. Identifying these predictors of mortality in the ED among trauma patients may help improve outcomes, especially through effective injury prevention focused on contributing factors and proximate causation of injury.

It is estimated that 30 to 50 percent of injured patients have a positive blood alcohol concentration at the time of trauma center admission, which suggests alcohol consumption contributes to severe injury requiring specialized trauma care. Alcohol may affect the injury process by mediating the body’s response to the traumatic injury, thereby reducing mortality. Further research with larger sample sizes could identify risk factors related to ED outcomes other than the dichotomous expired versus not expired. Limitations include ED acute care disposition was not completed on all trauma forms. There could be other factors in hospital care that influence ED disposition, such as level of EMS response and procedures performed which are not included in this study.

**REFERENCES**

2. American College of Surgeons Committee on Trauma. Resources for Optimal Care of the Injured Patient 2014 (6th edition) ([Electronic]).

**CONTACT INFORMATION**

Camry Hess, MPH
Jessica Skiba, MPH
Chess1@isdh.in.gov  
Jskiba@isdh.in.gov