Spatial epidemiology of summer trauma in Scott County, IA: Use of GIS to identify trauma incidence in urban and rural areas

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SPATIAL EPIDEMIOLOGY OF SUMMER TRAUMA IN SCOTT COUNTY, IA
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PROJECT OBJECTIVES

- Identify high-risk areas in Scott County for specific mechanisms of injury (MOI)
- Identify extreme outliers of trauma incidence
- Determine what MOI are most prevalent in Scott County

BACKGROUND

- Globally, trauma is one of the leading causes of death and disability
- Traumatic injury is a blanket term referring to acute physical injuries which pose an immediate threat to life and limb, require immediate emergency medical care, which has the potential to cause permanent disability or death
- Traumatic injuries are responsible for more than 30% of life years lost annually in the United States
- The economic burden caused by traumatic injuries is over $671 billion annually
- Geographic information systems (GIS) have demonstrated an ability to efficaciously evaluate and analyze challenges in public health
- Most traumatic injuries are caused by either falls or motor vehicle collisions
- The summer months produce higher rates of trauma incidence compared to the winter months

METHODS

The following data was collected from eligible patients:
- Date and time of arrival at trauma center
- Age
- Mechanism of injury (MOI)
- Race

These data was then combined with the geospatial location data from MEDIC EMS to form a complete spatial data set which was then plotted using ArcMap (see Cartographic Model).

Further steps for research include:
- Establishing a full and complete data set over the course of an entire calendar year (or two)
- An analysis of trauma alert patient outcomes using the same process to analyze other adverse health events in Scott County
- Using the same process to analyze other adverse health events in Scott County

REFERENCES