

The Spatial Epidemiology of Pediatric Trauma: A Statewide Assessment

Allison Ertl¹, MS

Yuhong Zhou¹

Kirsten Beyer¹, PhD, MPH, MS

Sergey Tarima¹, PhD

Jonathan I. Groner², MD

Laura D. Cassidy¹, MS, PhD

Pediatric Trauma Society Annual Meeting
November 7, 2015

¹ Medical College of Wisconsin, Milwaukee, WI

² Nationwide Children's Hospital, Columbus, OH

Funding Acknowledgement

Research reported in this presentation was supported by the *NICHD* of the National Institutes of Health under award number 1R03HD071924-01A1, Laura D. Cassidy, PhD Principal Investigator. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

Introduction

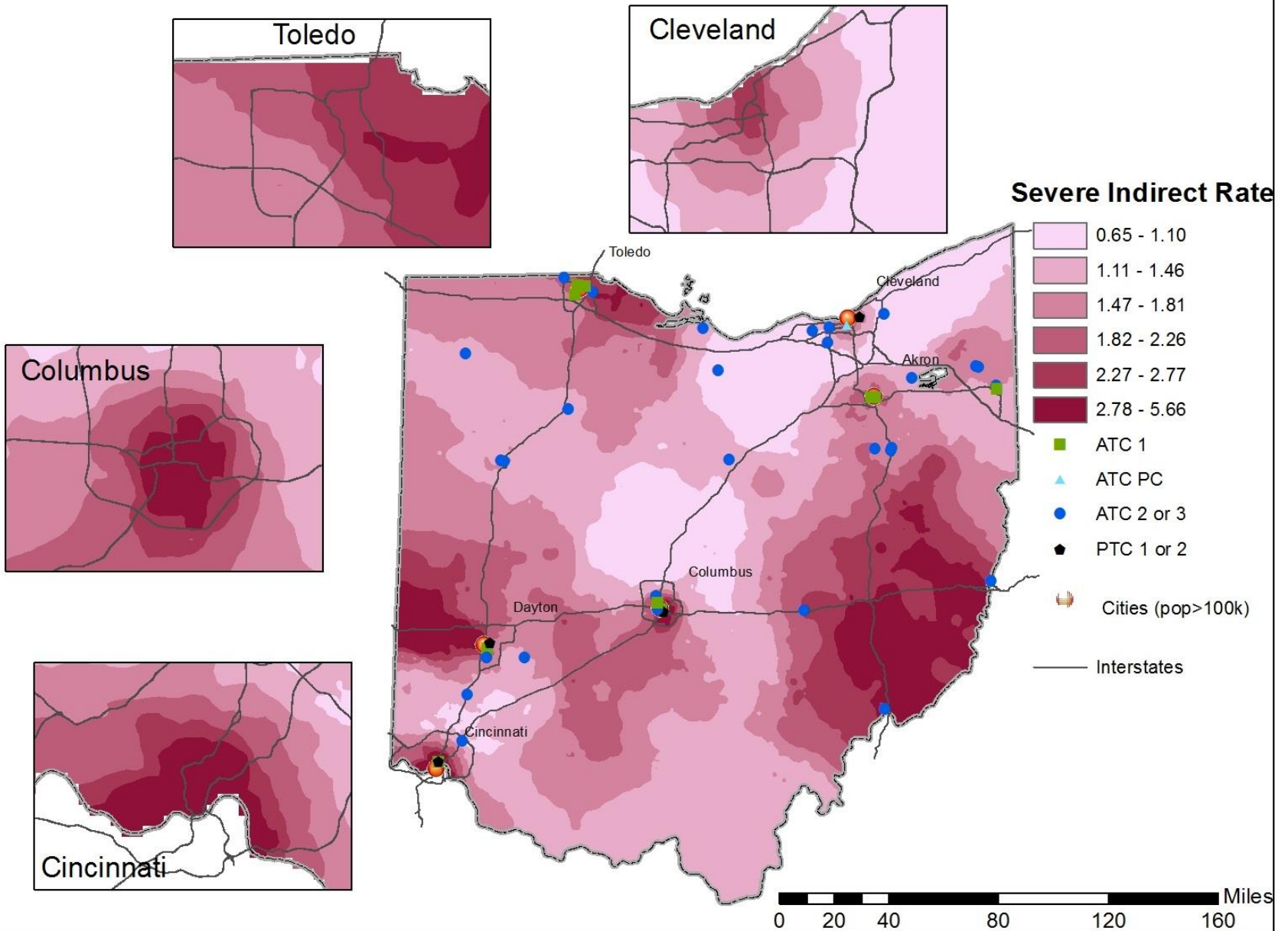
- Trauma is the leading cause of death in children ages 19 years and younger
- Identification of areas with high rates of pediatric trauma needed
- Geographic Information Sciences (GIS) can be used for trauma surveillance and spatial organization of trauma data
- This study used GIS to analyze statewide data from the Ohio Trauma Registry (OTR) to identify spatial patterns in pediatric injury

Methods

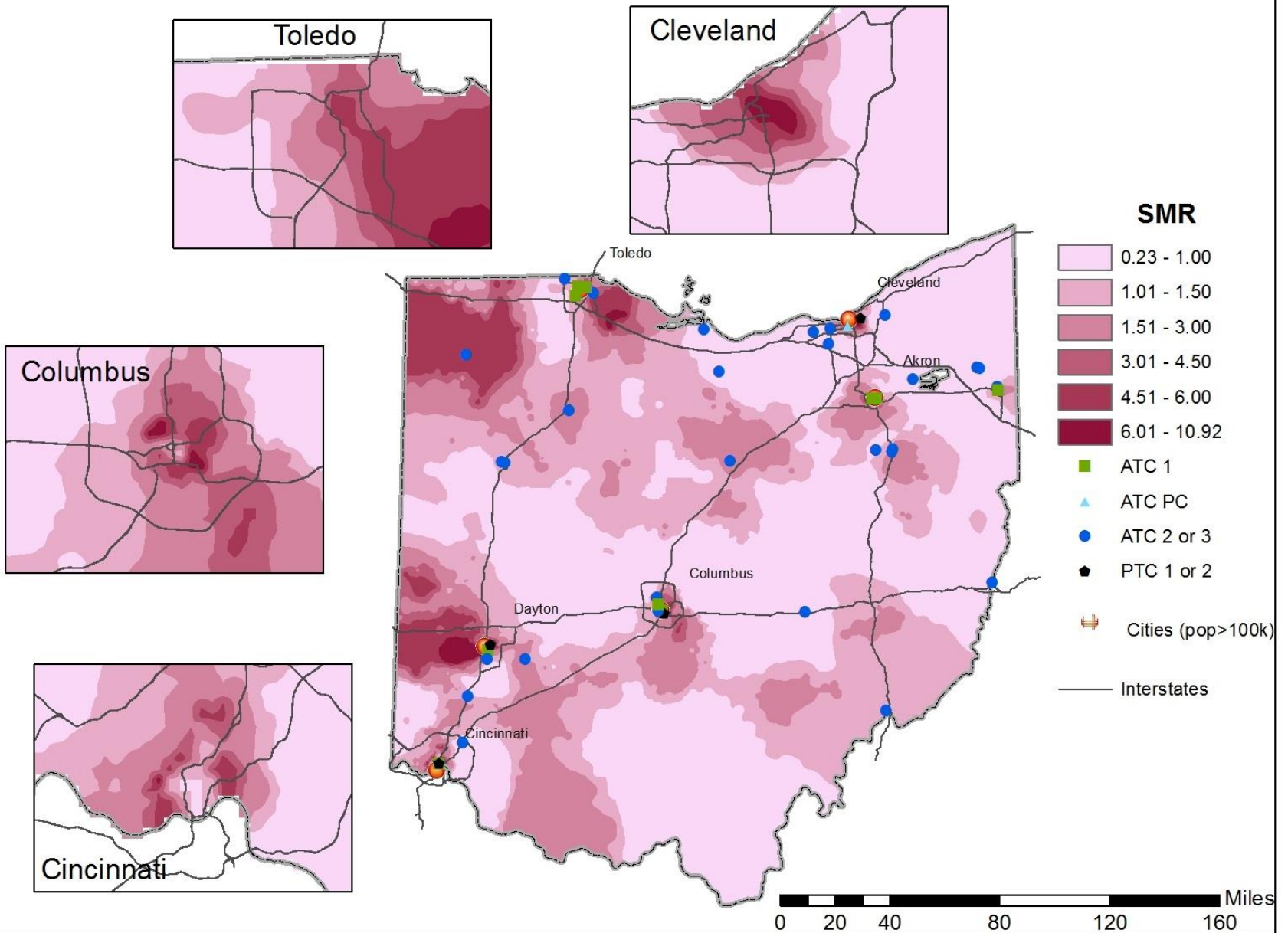
- OTR contains 89% of Ohio's Hospitals
- Data on 17,377 pediatric trauma patients under 16 years old from 2007-2012
- Adaptive spatial filtering effectively controls for population size
- Age- and sex- adjusted pediatric trauma rates
 1. Severe trauma indirect rate (Injury Severity Score (ISS) >15)
 2. Standardized Mortality Ratio

RESULTS

Pediatric Trauma Indirect Rate Map, ISS>15, Ohio 2007-2012



Pediatric Trauma Standardized Mortality Ratio Map, Ohio 2007-2012



Conclusion

- Areas with higher than expected age- and sex-adjusted rates of severe injury and mortality, particularly those >1 hour from a PTC or Level I ATC, should be further explored to identify opportunities for injury prevention and appropriate access to timely care.

Questions?

alertl@mcw.edu

Acknowledgment: The authors would like to acknowledge Timothy Erskine and Schuyler Schmidt of the Ohio Department of Public Safety for providing the data.

Pediatric Trauma Indirect Rate Map, Ohio 2007-2012

