

DELAWARE BRAIN INJURY STUDY

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INTRODUCTION

- Traumatic Brain Injury (TBI) is a significant public health concern in the United States⁽¹⁾.
- TBI is a leading cause of death and disability, with 1.7 million cases annually in the US⁽¹⁾.
- The economic burden of TBI exceeds \$76 billion per year⁽²⁾.
- Causes of TBI include accidents, falls, sports injuries, and assaults⁽¹⁾.

OBJECTIVES

- To identify the incidence of TBI in Delaware by year, age group, gender and insurance type.
- To identify the characteristics of the TBI persons with regards to follow-up care patterns.
- To influence funding or legislation for impacting improvements for TBI prevention and availability of services.

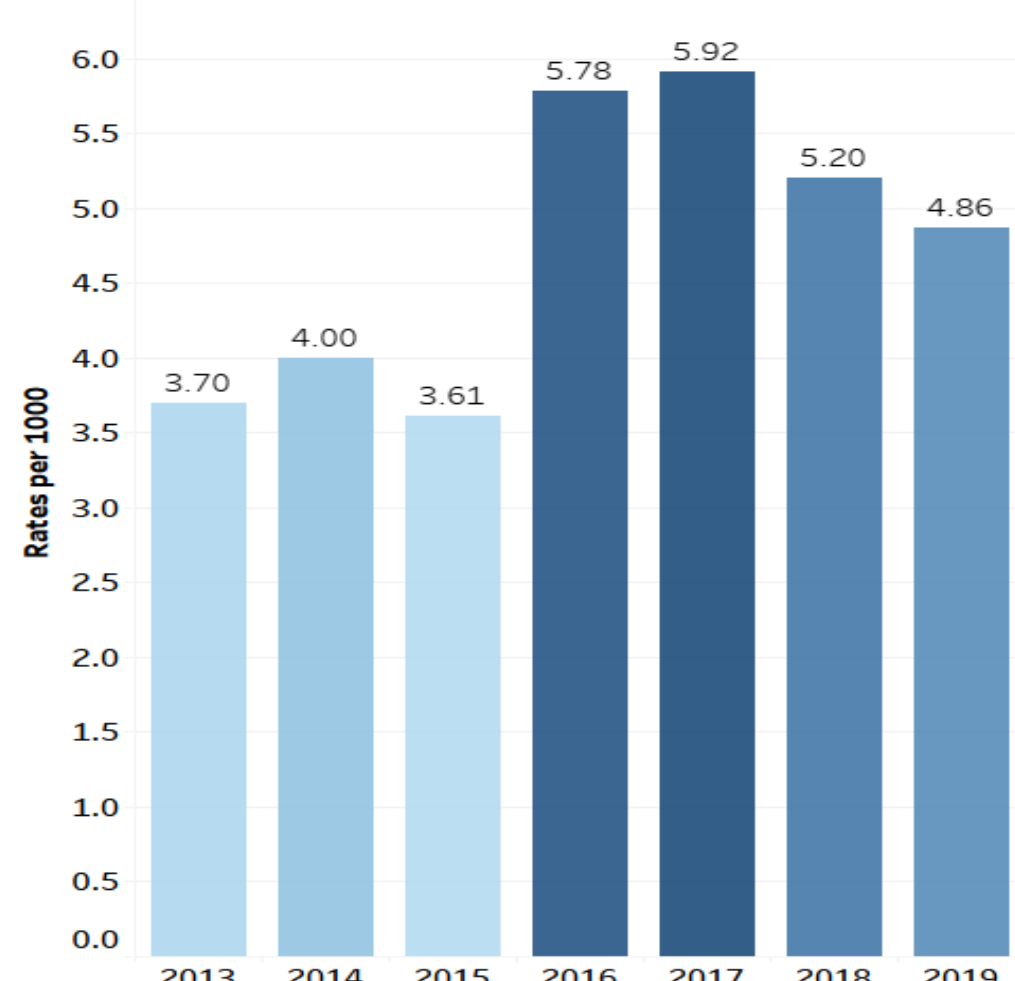
METHODS

- Data was collected from the Healthcare Claims Database Delaware (HCCD) spanning from 2013-2019
- The TBI population was identified using ICD-10 diagnosis codes and classified into mild, moderate, and severe categories based on Emergency Department severity CPT codes.
- Annual prevalence rates were analyzed, stratified by age group, gender, and insurance type.
- Post-discharge follow-up care was assessed among the identified cohort, including:
 - Proportion of patients utilizing follow-up care
 - Proportion of patients receiving follow-up care within 30 days
 - Distance traveled (visualized on a map) to access follow-up care, stratified by traumatic brain injury type.

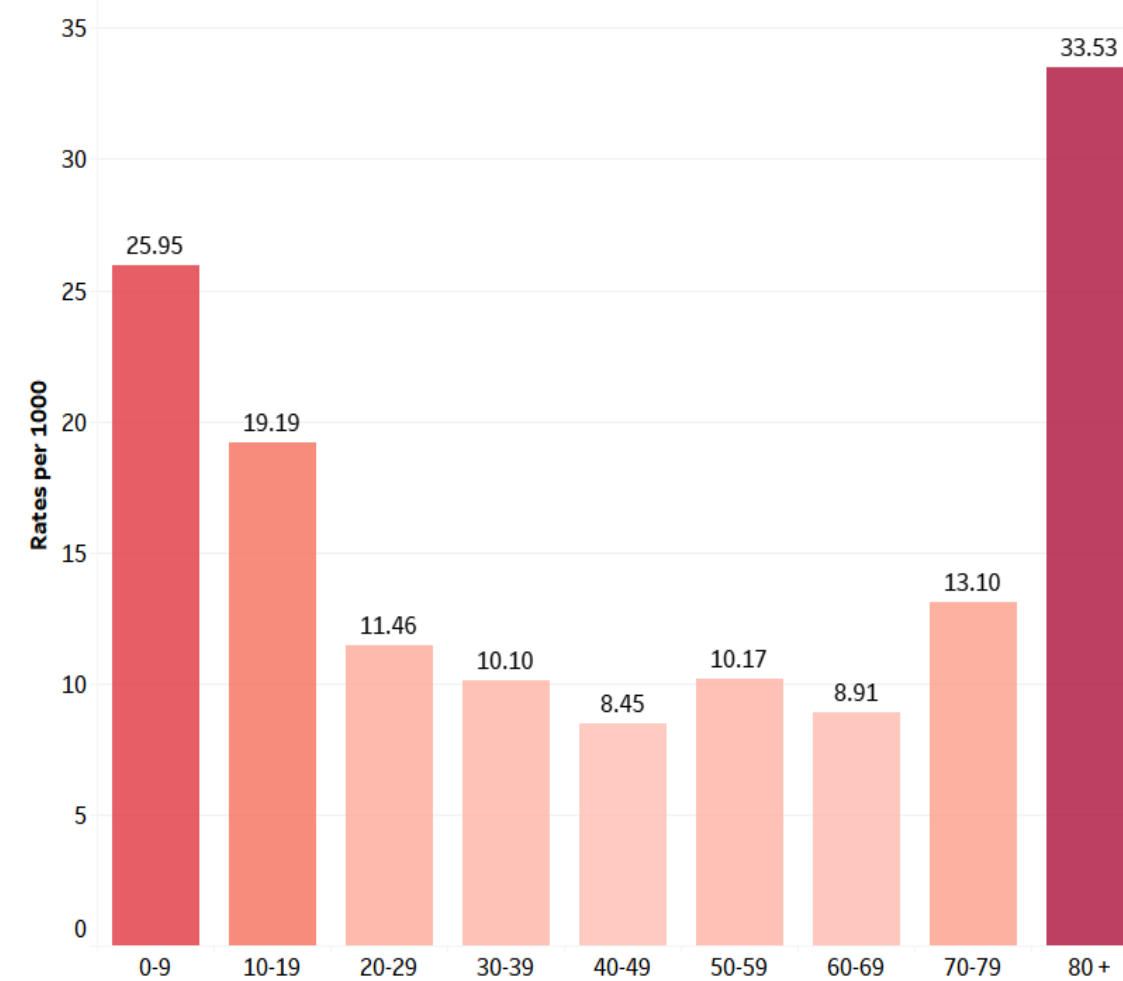
RESULTS

- TBI incidence in 2017 was the highest at 5.92 persons per thousand, with the 80+ age group most affected (33.53 per thousand).

TBI Population by Year

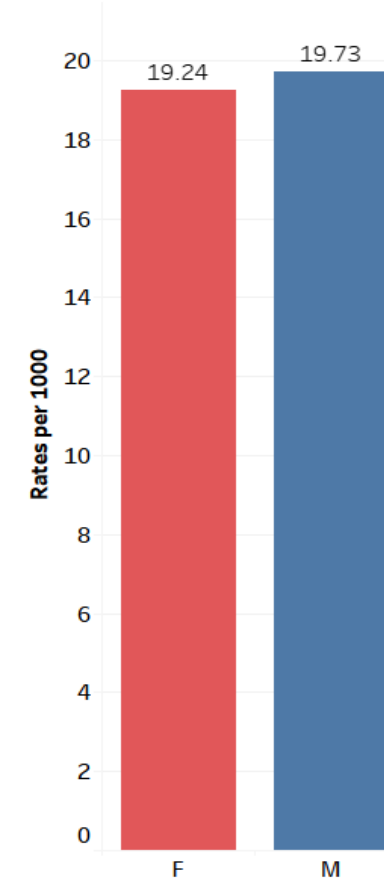


TBI population by Age Group from year 2013-2019

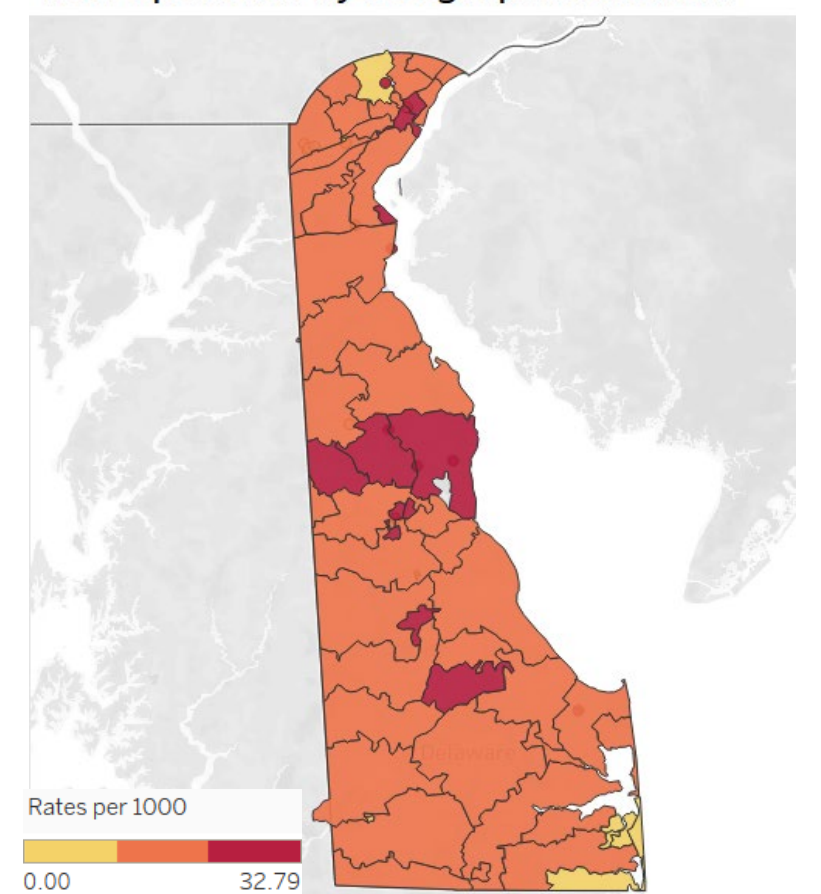


- Males had slightly higher TBI rates compared to females (19.73 per thousand vs. 19.24 per thousand).

TBI population by Gender from year 2013-2019

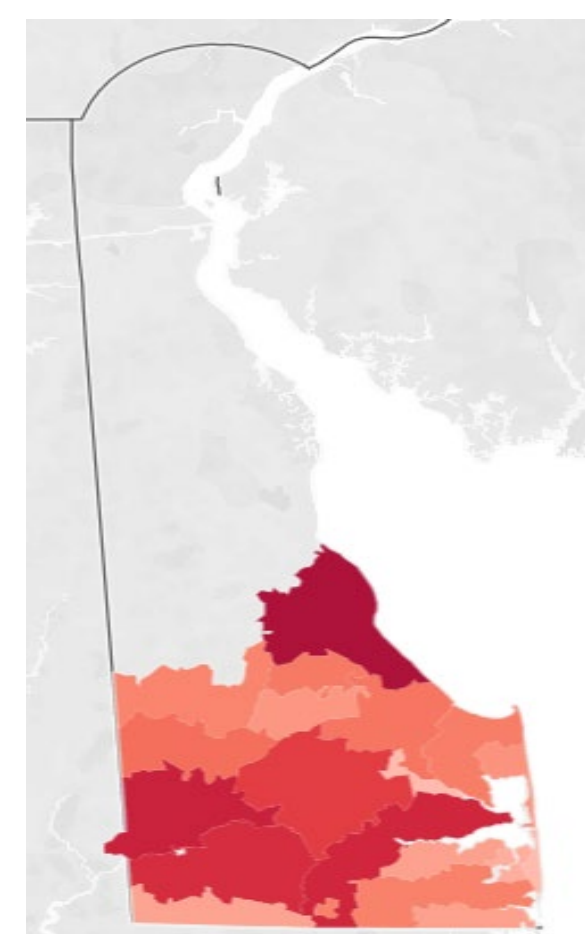


TBI Population by Geographic location

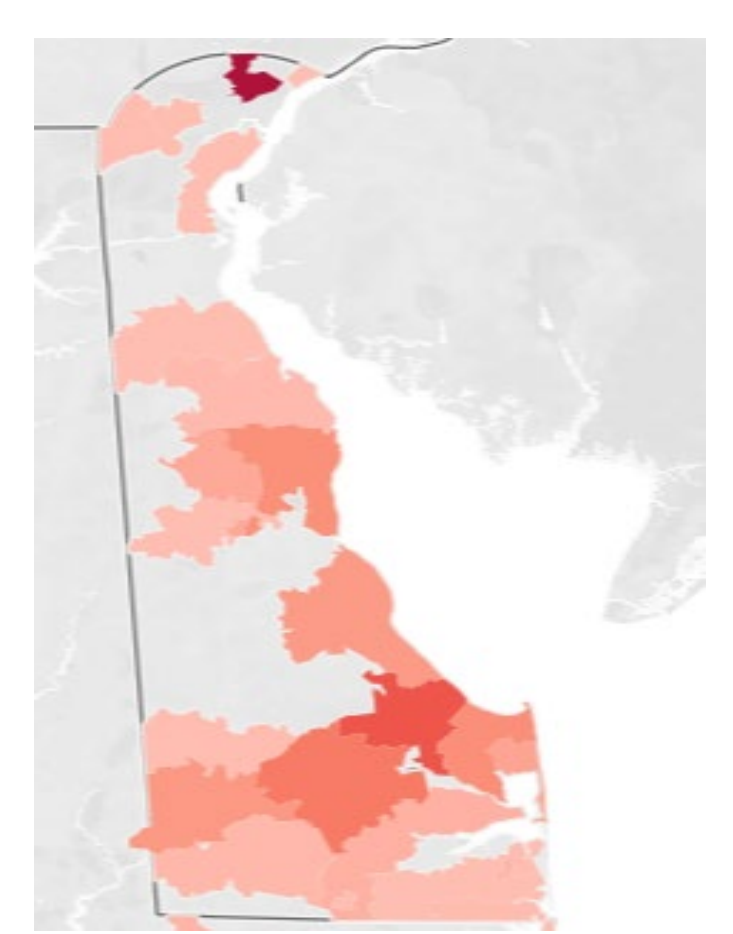


- Only 14% of the 34,870 individuals received follow-up care post-discharge during 2016-2020.
- Geographic analysis revealed that 33.25% of the 0-18 age group patients from Sussex county travel to Zip code 19803 in the New Castle county for their follow-up care.

Member zipcode



Provider zipcode



CONCLUSION

- These results underscore the need for increased efforts to improve TBI prevention and the availability of services.
- By understanding the incidence patterns and follow-up care gaps, targeted interventions can be developed to ensure timely and accessible follow-up care for individuals with TBI, particularly in underserved areas.

NEXT STEPS

- Conducting an analysis to understand the impact of social determinants on this population at the census tract level.
- This analysis will provide valuable insights into key questions such as the disproportionate impact on specific racial groups and the potential role of household income and education.
- By delving into these factors, we can develop targeted interventions to address the underlying disparities and promote equitable outcomes for all.

REFERENCES

1. Centers for Disease Control and Prevention (CDC). (2019). Traumatic Brain Injury & Concussion. Retrieved from <https://www.cdc.gov/traumaticbraininjury/index.html>
2. Faul, M., Xu, L., Wald, M. M., & Coronado, V. G. (2010). Traumatic Brain Injury in the United States