

Background

- Uninsured children with critical illness experience worse outcomes than children with either public or private insurance
- Uninsured children tend to be more ill at admission, present later in their disease course, and receive fewer interventional procedures with an associated greater odds of inpatient mortality
- An impact of insurance status on clinical outcomes among children with severe acute traumatic brain injury (TBI) has also been observed
- The aim of this study is to fill an existing literature gap in determining how insurance status impacts discharge disposition among children admitted with TBI

Hypothesis

- Children without insurance will be less likely to be transferred to inpatient rehabilitation than children with either public or private insurance

Methods

- Retrospective cohort analysis performed on data obtained from the National Trauma Data Bank between January 2017 and December 2019
- Children 0-18 years old admitted to a hospital with TBI of any severity
- The primary study outcome was the hospital discharge disposition (location)
- Secondary outcomes included ICU length of stay (LOS), hospital LOS, occurrence of inpatient complications, and mortality

Statistical Analyses

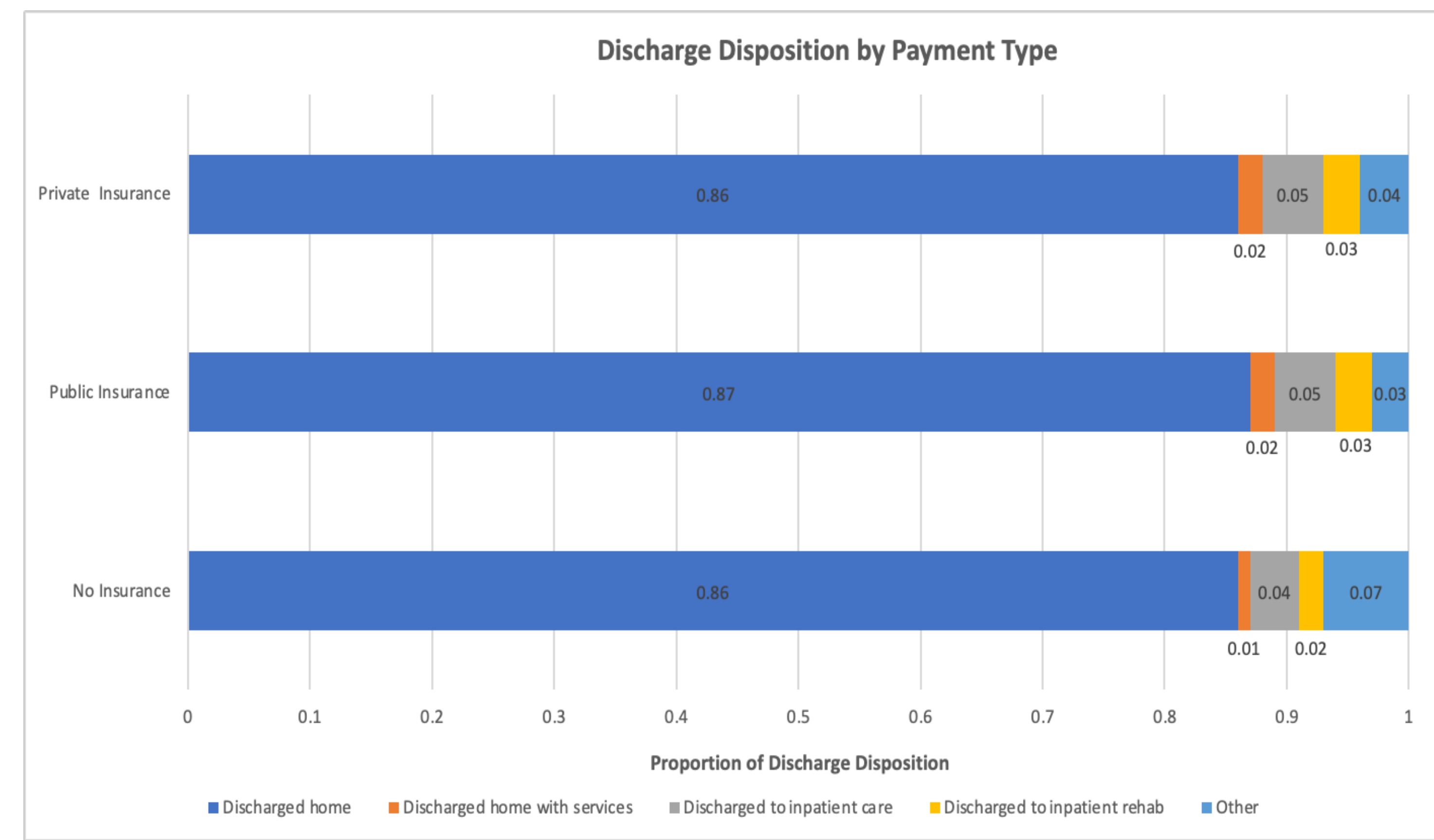
- ANOVA was used to analyze continuous variables and Chi-square testing without continuity correction was used for categorical variables
- Correction of p-values for multiple comparisons was done using Bonferroni correction. All p-values were two-sided with significance thus set at $p < 0.0008$ (0.05/62); statistically significant univariate analyses are bolded

Table 1. Demographic information of patients admitted with traumatic brain injury 2017-2019.

	No Insurance n =3,692	Public Insurance n =28,248	Private Insurance n =27,512	p-value
Age (years, mean, SD)	10.4 (6.5)	7.4 (6.6)	10.4 (6.3)	<2.2x10⁻¹⁶
Sex (n, %)				0.0004146
Male	2452 (66%)	17795 (63%)	17622 (64%)	
Female	1239 (34%)	10447 (37%)	9887 (36%)	
Race (n, %)				<2.2x10⁻¹⁶
White	2280 (62%)	15955 (56%)	20805 (76%)	
Black or African American	677 (18%)	6362 (23%)	2725 (10%)	
Asian	64 (2%)	469 (2%)	782 (3%)	
Mixed/multiple races	18 (0.5%)	142 (0.5%)	89 (0.3%)	
Other	653 (18%)	5320 (19%)	3111 (11%)	
Ethnicity (n, %)				<2.2x10⁻¹⁶
Hispanic or Latino	812 (22%)	6943 (25%)	3314 (12%)	
Mechanism of Injury (n, %)^a				<2.2x10⁻¹⁶
Motor vehicle accident	1665 (45%)	9483 (34%)	12122 (44%)	
Blunt head trauma	1694 (45%)	14902 (52%)	14042 (51%)	
Penetrating head trauma	138 (4%)	659 (2%)	330 (1%)	
Abusive head trauma	103 (3%)	2401 (9%)	499 (2%)	
Other	92 (3%)	803 (3%)	519 (2%)	
Non-accidental Trauma (n, %)				<2.2x10⁻¹⁶
Report Made	248 (7%)	4709 (17%)	1475 (5%)	
Investigation conducted	215 (87%)	4321 (92%)	1310 (89%)	0.0001784

Results

- There were 59,452 children included in the study of which 3,692 children had no insurance, 28,248 children had public insurance, and 27,512 had private insurance. Select demographics of the cohort are shown in Table 1
- There was no significant difference in the rate of hospital associated events including DVT, PE, sepsis, unplanned return to the OR, or unplanned admission to the ICU
- Children with no insurance when compared to children with public or private insurance:
 - Had greater TBI severity (16% with GCS <8 vs 13% and 12%, **p<0.001**)
 - Had shorter ICU LOS measured in days (3.9 (SD 5.7) vs 4.8 (SD 7.4) and 4.5 (SD 6.3), **p<0.001**)
 - Had shorter hospital LOS measured in days (4.3 (SD 8.6) vs 4.9 (SD 9.0) and 4.5 (SD 7.4), **p<0.001**)
 - Had a lower average maximum GCS score (13.5 (SD 3.6) vs 13.9 (SD 3.1) and 14.0 (SD 2.9), **p<0.001**)
 - Had more frequent withdrawal of life sustaining support (2% vs 1% and 1%, **p<0.001**)
 - Had a higher mortality (7% vs 3% and 3%, **p <0.001**)
- There was a significant difference in discharge disposition among children with no insurance including less children being discharged home with services or to inpatient rehabilitation (**p <0.001**), as shown in Figure 1



Conclusion

- Children without insurance are less likely to be discharged to inpatient rehabilitation or to home with services
- Limitations of the study include how individual state public insurance policies impact the number of insured children

Disclosures

The authors have no disclosures to report.

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