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Does private vehicle transport in trauma really save you time and money?

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Does private vehicle transport in trauma *really* save you time and money

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Background

- Patient outcomes better with Private Vehicle Transport (PVT) vs Emergency Medical Services (EMS)
- Faster transit times with PVT
- Inadequate prehospital triage with PVT
- Hypothesis:
  - PVT *IS NOT* the superior mode of transport in trauma setting
  - PVT increases time to care, impairs resuscitation efforts, increases overall costs via lack of pre-hospital triage

Methods

- Academic, Regional, Level 1 Trauma center in Detroit between 2013-2017

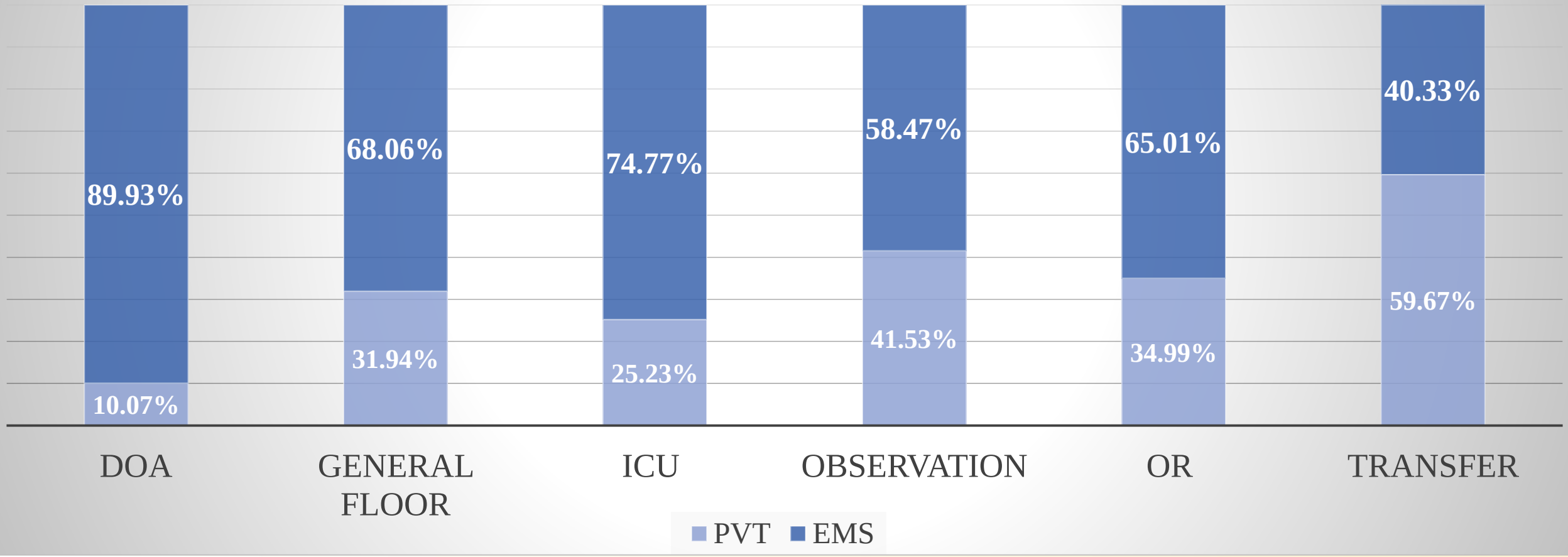
- Retrospective study utilizing data from trauma registry and patient chart reviews
  - N=4997
  - PVT n=1782

- Trauma patients arriving via PVT or EMS with any of the three dispositions were included:
    - Admitted
    - Deceased in ED
    - Transferred out of Hospital

Methods (cont.)

- Exclusion criteria included anyone transferred from outside hospital
- Chi square tests for nominal data and independent sample t-tests for continuous data
  - Significance defined as $p < 0.01$

Graph 1. Disposition from Emergency Department by EMS or PVT: p-value <0.001



Graph 2. Time spent in emergency department for patients activated at the highest levels (PVT vs EMS)

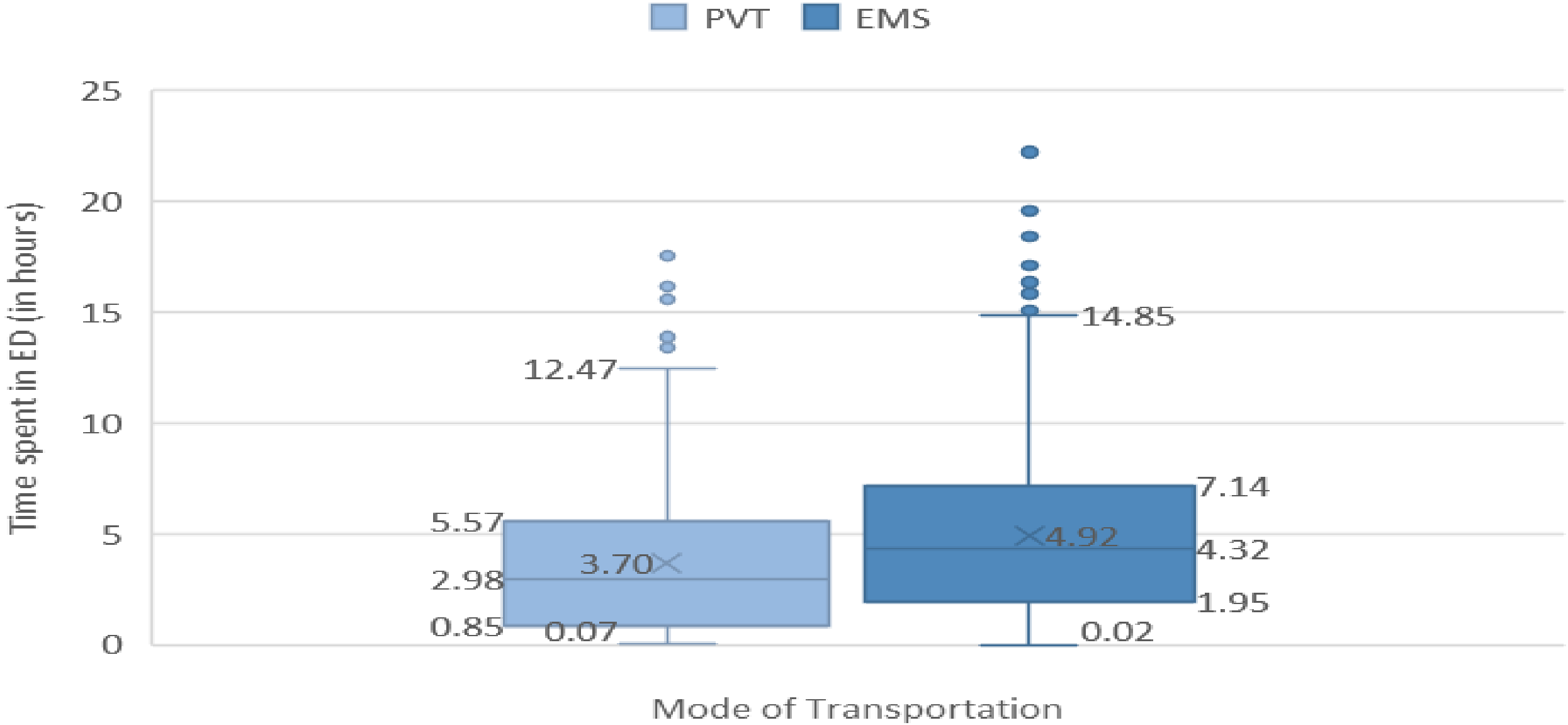


Table 2. Average Time to Disposition (in hours)

		All	PVT	EMS	P-value
All	All, n (%)	*4273*	*1425 (33%)*	*2848 (67%)*	
	mean (s.d.)	6.74 (4.1)	6.57 (4.1)	6.83 (4.2)	0.050
	median	6.42	6.25	6.45	
Injury Severity	ISS > 15, n (%)	*574*	*131 (23%)*	*443 (77%)*	
	mean (s.d.)	4.56 (3.5)	4.72 (3.63)	4.52 (3.4)	0.573
	median	4.12	4.68	4.02	
	Highest Activation Levels, n (%)	*1708*	*415 (24%)*	*1293 (76%)*	
	mean (s.d.)	**4.62 (3.6)**	**3.70 (3.2)**	**4.92 (3.6)**	**< 0.01**
	median	4.02	2.98	4.32	
Type of Injury	Penetrating Injury, n (%)	*631*	*272 (43%)*	*359 (57%)*	
	mean (s.d.)	3.31 (3.1)	3.48 (3.3)	3.18 (2.9)	0.243
	median	2.38	2.47	2.28	
	Blunt Injury, n (%)	3630	1142 (31%)	2488 (69%)	
	mean (s.d.)	7.36 (4.0)	7.36 (3.8)	7.36 (4.0)	0.963
	median	6.98	6.95	6.98	
Disposition	Operating Room, n (%)	*763*	*266 (35%)*	*497 (65%)*	
	mean (s.d.)	3.92 (3.8)	3.47 (3.5)	4.17 (3.9)	0.012
	median	2.85	2.46	2.98	
	Intensive Care Unit, n (%)	*1183*	*299 (25%)*	*884 (75%)*	
	mean (s.d.)	**6.65 (3.6)**	**7.27 (3.5)**	**6.44 (3.7)**	**< 0.01**
	median	6.37	6.88	6.12	

= significantly higher

Conclusions

- Average time to disposition for PVT activated at highest levels was significantly shorter
- PVT required more transfers to outside hospitals
- PVT had greater associated costs
- No difference in time to care
- PVT had less Dead On Arrival (DOA) patients