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

Maritza D. Essis Henry Ford Health System, messis 1@hfhs.org

Ursula Barghouth
Henry Ford Health System, ubargho1@hfhs.org

David Moore
Henry Ford Health System, dmoore9@hfhs.org

Kendra Colbert

Jeffrey Johnson Henry Ford Health System, jjohns52@hfhs.org

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School of Medicine -

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



Maritza D. Essis¹, Ursula Barghouth², David Moore², Kendra Colbert¹, Jeffrey Johnson²

- 1. Wayne State University School of Medicine
- 2. Henry Ford Health System, Department of Acute Care Surgery





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

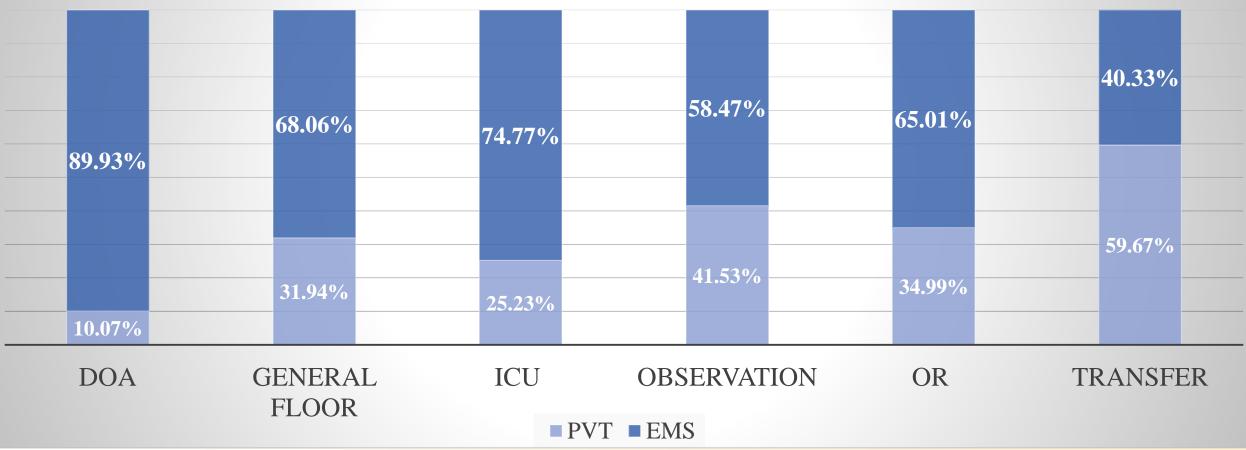


Methods (cont.)

- 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

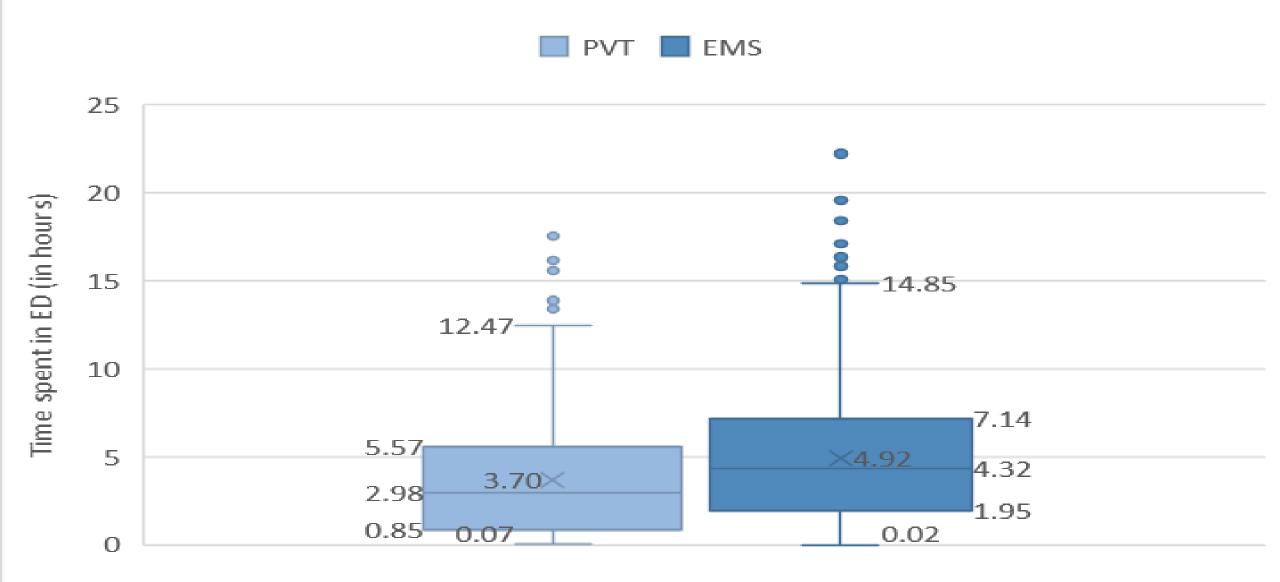


Graph 1. Disposition from Emergency Department by EMS or PVT: p-value <0.001





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



Mode of Transportation

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%)	
ᅽ	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

