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Trauma Patients Still Use Private Vehicle Transport Despite Improvement in EMS Response Times

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The background features a large, light blue watermark of the Henry Ford Medical Group logo. At the top, the name "Henry Ford" is written in a cursive script. Below it is a shield-shaped emblem with a caduceus in the center, flanked by two olive branches. A banner at the bottom of the shield contains the Latin motto "INVENIO COMMITTO".

Trauma Patients Still Use Private Vehicle Transport Despite Improvement in EMS Response Times

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Disclosures

None



WAYNE STATE
School of Medicine



Background: EMS Response Times in Detroit

- Historically long due to recession and cutbacks
- EMS response times seem to be improving
- Detroit uses private vehicle transport (PVT) at nearly 3x the national average
- **Hypothesis:** as EMS response times improve, utilization of PVT should decrease



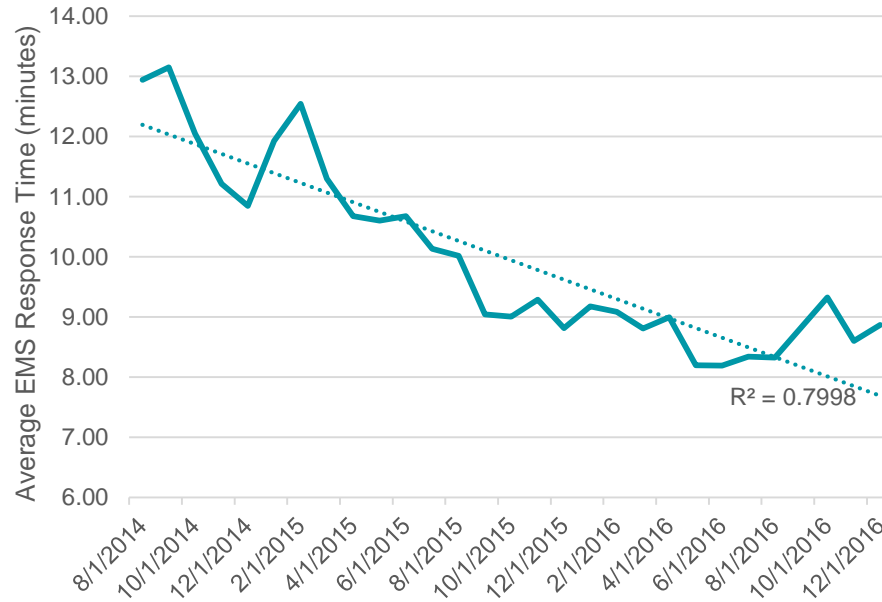
Methods

- **Study Type:** Retrospective study over a 28 month period at an academic, regional Level 1 trauma center in Detroit
- **Inclusion criteria:** all Trauma Registry patients
- **Exclusion criteria:** transferred from outside hospitals
- **Data Collection:** chart review & City of Detroit's performance dashboard
- **Data analysis:** correlation and best fit linear regression
- **Subgroup Analysis:**
 - Injury severity
 - Violent vs nonviolent trauma
 - Insurance status
 - Intoxication status



Results

Average EMS Response Time in Detroit
(change over time, $p < 0.001$)



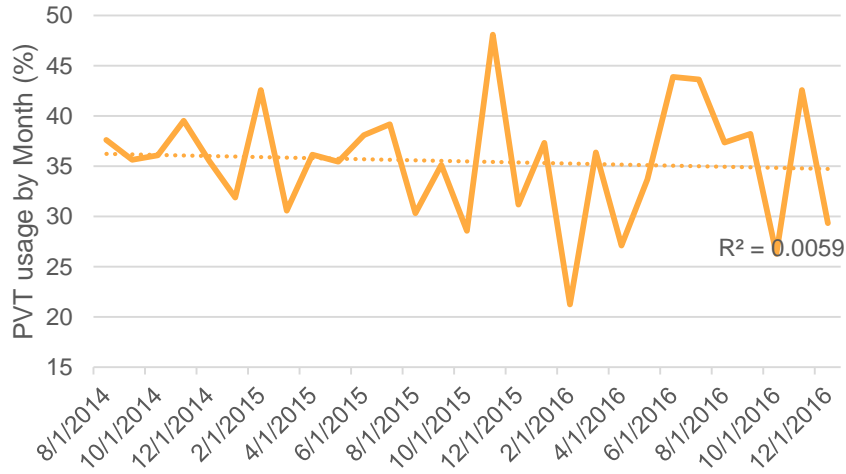
Henry Ford Hospital Data:

- Total included patients: 2502
- Total PVT Usage: 892 (36%)

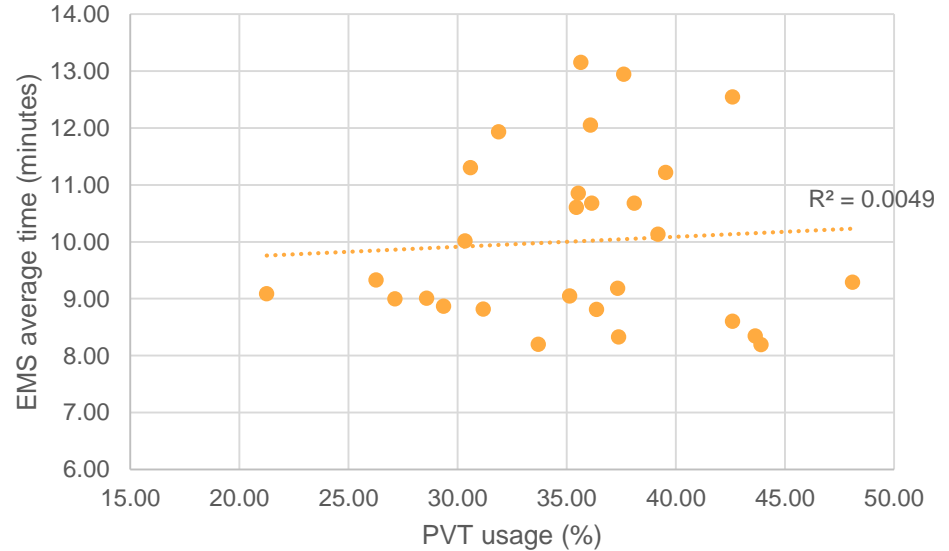


Results – Total Population

PVT usage (%) by month
(change over time, $p = 0.60$)



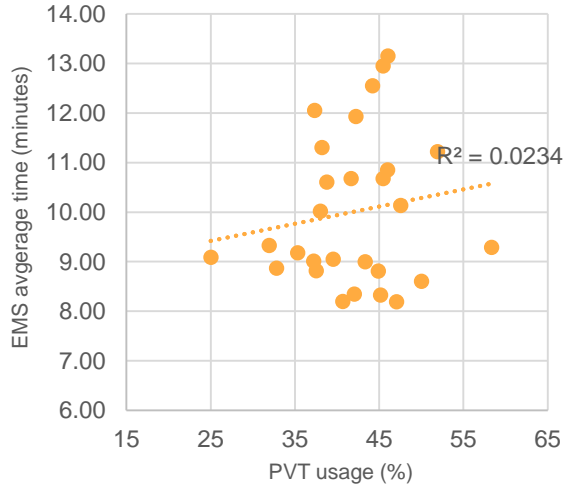
PVT usage (%) vs Average EMS Response
Time, (by month, $p = 0.82$)



Results – Injury Severity

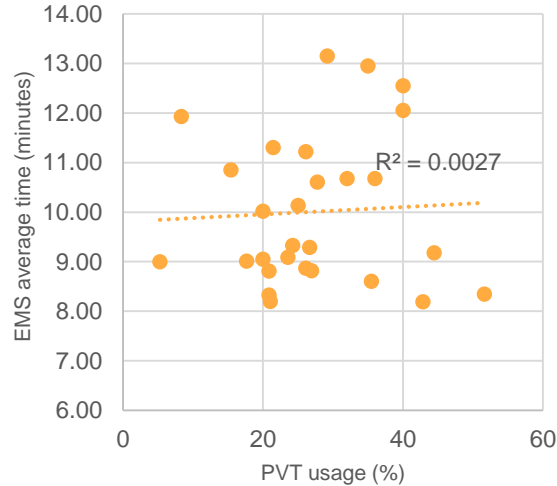
Minor Injury (ISS < 9, n=1507)

PVT usage (%) vs Average EMS Response Time by month (ISS < 9, p=0.44)



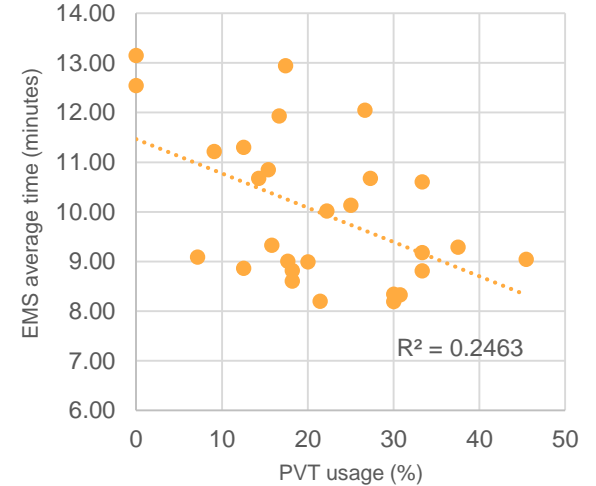
Moderate Injury (ISS 9-15, n=636)

PVT usage % vs Average EMS Response Time by month (ISS 9-15, p=0.79)



Serious to Critical Injury (ISS > 15, n=359)

PVT usage % vs Average EMS Response Time by month (ISS > 15, p=0.007)



Results (continued)

	n	PVT vs EMS	PVT change over time
Insured	2108	$R^2 = 0.0083$ $p = 0.65$	$R^2 = 0.1353$ $p = 0.05$
Uninsured	197	$R^2 = 0.0796$ $p = 0.15$	$R^2 = 0.1201$ $p = 0.07$
Intoxicated	782	$R^2 = 0.0421$ $p = 0.29$	$R^2 = 0.0416$ $p = 0.29$
Violent Trauma	2108	$R^2 = 0.0012$ $p = 0.86$	$R^2 = 0.0052$ $p = 0.71$
Non-violent Trauma	1842	$R^2 = 0.0082$ $p = 0.65$	$R^2 = 0.0055$ $p = 0.70$



Conclusion

- Despite improving EMS times in Detroit, there was no corresponding decrease in PVT usage over time
- Potential explanations
 - Lack of recognition in community
 - Delay in observation
 - Culture of individual automobile use
 - Fear of legal consequences
 - Other reasons for PVT use



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Questions?

Thank you for your time