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

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

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Disclosures

None
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

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)

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

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

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

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

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

<table>
<thead>
<tr>
<th>Category</th>
<th>n</th>
<th>PVT vs EMS</th>
<th>PVT change over time</th>
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</thead>
<tbody>
<tr>
<td>Insured</td>
<td>2108</td>
<td>$R^2 = 0.0083$</td>
<td>$R^2 = 0.1353$</td>
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<tr>
<td></td>
<td></td>
<td>p = 0.65</td>
<td>p = 0.05</td>
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<tr>
<td>Uninsured</td>
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<td>$R^2 = 0.0796$</td>
<td>$R^2 = 0.1201$</td>
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<td></td>
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<td>p = 0.15</td>
<td>p = 0.07</td>
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<td>Intoxicated</td>
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<td>p = 0.29</td>
<td>p = 0.29</td>
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<tr>
<td>Violent Trauma</td>
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<td></td>
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<td>Non-violent Trauma</td>
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<td></td>
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<td>p = 0.65</td>
<td>p = 0.70</td>
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</tbody>
</table>
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
Thank you for your time.

Questions?