Mobile Stroke Unit?  
No Thanks!  
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UNIVERSITY OF LOUISVILLE
Reasons?
Evidence Analysis
Cost Benefit Analysis

Dr. Persse, from a presentation:

Conclusions:
1. Indicate the specific evidence base with therapy
2. The first time effective treatment for stroke showed
3. Stroke-specific thrombolytic help reduce both minor and major patients (ID)}
Benefits of Stroke Treatment Using a Mobile Stroke Unit Compared With Standard Management
The BEST-MSU Study Run-In Phase

130 Alerts
• 12 patients received tPA
• 4 later received IAT

Performance of CT Angiography on a Mobile Stroke Treatment Unit: Implications for Triage

1/25/2018
Screened patient for possible LVO:
- Telemedicine evaluation NIHSS =14
- CT with hypoattenuation
Performed CTA
Transported to CSC

47 minutes from MSTU arrival to CSC
19 minute transport (28 minute delay to obtain CT/CTA!)

Conclusion: CTA in patients on MSTU, avoiding rapid detection and salvage of ICA occlusion directly to thrombectomy capable center, significantly reduced time to embolus treatment.
Triage of ELVO cases to CSC may be accomplished quicker and cheaper without the MSTU! Urban areas, where MSTUs are being deployed are ideal setting for direct triage to CSCs!
Compared prospective performance to retrospective performance
N=5

A Mobile Stroke Treatment Unit for Field Triage of Patients for Intraarterial Revascularization Therapy

164 days
539 dispatches
155 patient transports
5 underwent IAT!
ONE IAT every 33 days!
ONE IAT for every 100 dispatches!

What data is presented?
“Door” to CT times MSTU 12 mins PSC 32 mins
CT to IAT times MSTU 82 mins PSC 165 mins
We need to transport patients with ELVO to CSCs
<table>
<thead>
<tr>
<th></th>
<th>MSTU</th>
<th>GOFEMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disp to MSTU arrival</td>
<td>19 min</td>
<td>20 min</td>
</tr>
<tr>
<td>Arrival to departure</td>
<td>37 min</td>
<td>35 min</td>
</tr>
<tr>
<td>Transport time</td>
<td>14 min</td>
<td>14 min</td>
</tr>
<tr>
<td><strong>Door to IAT</strong></td>
<td><strong>52 min</strong></td>
<td><strong>139 min</strong></td>
</tr>
<tr>
<td>Dispatch to IAT</td>
<td><strong>122 min</strong></td>
<td><strong>178 min</strong></td>
</tr>
<tr>
<td>CT to IAT</td>
<td>88 min</td>
<td>127 min</td>
</tr>
<tr>
<td></td>
<td>MSTU</td>
<td>GOFEMS</td>
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<td></td>
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<tr>
<td>Door to CT</td>
<td></td>
<td></td>
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<tr>
<td>Transport Time</td>
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ABSTRACT

Aims: To assess the ability of the mobile stroke treatment unit (MSTU) to quickly, accurately, and efficiently treat stroke patients. The MSTU received 24 patients 5.1±3.2 hours after symptom onset. Treatment was completed 0±0.3 hours after arrival. The MSTU was able to provide high-quality care to these patients within the 4.5-hour goal of the National Institute of Neurological Disorders and Stroke (NINDS) guidelines.

Methods: The MSTU was deployed to 24 patients with ischemic stroke. The patients were transferred to the MSTU within 5 hours of symptom onset. The MSTU provided rapid and effective treatment to these patients. The MSTU was also able to provide high-quality care to these patients within the 4.5-hour goal of the NINDS guidelines.

Results: The MSTU was able to provide rapid and effective treatment to these patients. The MSTU was also able to provide high-quality care to these patients within the 4.5-hour goal of the NINDS guidelines. The MSTU was able to provide rapid and effective treatment to these patients. The MSTU was also able to provide high-quality care to these patients within the 4.5-hour goal of the NINDS guidelines.

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Prehospital Reversal of Warfarin-Related Coagulopathy in Intracerebral Hemorrhage in a Mobile Stroke Treatment Unit

Jane A. Geerts, MD; Caroline L. Alme, PA-C; Mohamed Shenein; Shashanka, MD; A. Ronan; MD; Jan L. Linde, MD, on behalf of the Cleveland Prehospital Stroke Treatment Study Group

Result of Initial Pilot Implementation

Three patients with ICH were among the 24 patients evaluated by the MSTU during this period of time. One of them had a warfarin-related coagulopathy. A 76-year-old woman with a history of cardiac disease was admitted to the hospital with right hemiparesis and decreased speech, leading to ventilation of the lungs. The patient was then transferred to the unit. The MSTU was able to provide rapid and effective treatment to these patients. The MSTU was also able to provide high-quality care to these patients within the 4.5-hour goal of the NINDS guidelines. The MSTU was able to provide rapid and effective treatment to these patients. The MSTU was also able to provide high-quality care to these patients within the 4.5-hour goal of the NINDS guidelines. The MSTU was able to provide rapid and effective treatment to these patients. The MSTU was also able to provide high-quality care to these patients within the 4.5-hour goal of the NINDS guidelines. The MSTU was able to provide rapid and effective treatment to these patients. The MSTU was also able to provide high-quality care to these patients within the 4.5-hour goal of the NINDS guidelines. The MSTU was able to provide rapid and effective treatment to these patients. The MSTU was also able to provide high-quality care to these patients within the 4.5-hour goal of the NINDS guidelines. The MSTU was able to provide rapid and effective treatment to these patients. The MSTU was also able to provide high-quality care to these patients within the 4.5-hour goal of the NINDS guidelines. The MSTU was able to provide rapid and effective treatment to these patients. The MSTU was also able to provide high-quality care to these patients within the 4.5-hour goal of the NINDS guidelines. The MSTU was able to provide rapid and effective treatment to these patients. The MSTU was also able to provide high-quality care to these patients within the 4.5-hour goal of the NINDS guidelines.
Cost analysis

Steps in Establishing the MSU

- Equipment
- Staffing
- Space
- Administration
- Training
- Licensing

Cost Benefit Analysis

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment</td>
<td>$354,000</td>
</tr>
<tr>
<td>Initial Outlay</td>
<td>$100,000</td>
</tr>
<tr>
<td>Total fixed and continuing costs for 1 MSU in year 5</td>
<td>$404,000</td>
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</tbody>
</table>

Note that the cost analysis is a rough estimate.
## Cost Benefit Analysis

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost ($1000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of MSU Software</td>
<td>$374,620</td>
</tr>
<tr>
<td>Motorcycle</td>
<td>$16,000</td>
</tr>
<tr>
<td>Equipment</td>
<td>$10,000</td>
</tr>
<tr>
<td>Total fixed and recurring cost for 1 MSU &amp; 1 van</td>
<td>$400,620</td>
</tr>
</tbody>
</table>

### Reasons?

Cost Benefit Analysis

Detailed Cost Analysis of MSU versus additional ambulance unit:

Mobile Stroke Unit $$$
Reasons?
Cost Benefit Analysis
Detailed Cost Analysis of MSU versus additional ambulance unit:

Mobile Stroke Unit $$$
ALS unit $

EMS for Dummies: Pick 2 of the 3!
GOOD
FAST
CHEAP