Numbering Our Blessings

Data-Driven Improvements in Stroke Care
(Florida Registry)

Broward EMS Stroke Coalition
Peter Antevy MD
Questions to Consider?

- Who two entities can make the biggest impact in stroke outcomes?

- How can you get your hospital’s stroke data outcomes (sans humans)?
5 Rights of Stroke Destination

- Which hospital deserves to receive this patient?
- Right Patient
- Right Scale
- **Right Hospital**
- Right Process
- Right NOW
A New Type of Stroke Center

1. Primary Stroke Center (PSC)
2. Comprehensive Stroke Center (CSC)
3. Thrombectomy Stroke Center (TSC)
Positive Endovascular Stroke Trials 2015

Endovascular

Control

MR CLEAN P<0.05  REVASCAT P<0.05  ESCAPE P<0.001  SWIFT PRIME P<0.001  EXTEND-IA P<0.01  THERAPY NS

33%  44%  53%  60%  71%  38%

19%  28%  29%  36%  40%  30%
73% relative risk reduction of dependency in ADL’s
NNT for any lower disability 2.0

Nogueira et al. ESOC 2017.
EMS Stroke Triage in Modern Era

Rural United States

South Florida

CSC

CSC
Certification Matters

- How are PSC’s Certified?
  - 73.8% JC, 3.7% DNV, 1.2% HFAP, 21.3% State

- State-based centers underperformed Joint Commission hospitals
  - tPA administration rates
  - Door-to-needle times
  - In-hospital mortality

Is Onsite Visit Required?

For State-level certification (Attestation)

• Yes
  • Massachusetts Department of Health
  • New York Department of Health

• No
  • Maryland Institute for Emergency Medical Services
  • Georgia Department of Public Health
  • Texas Department of State Health Services
  • Florida Agency for Health Care Administration
  • Oklahoma State Department of Health
  • Connecticut Department of Public Health

Information on Stroke Care Difficult to Find

• Get With The Guidelines
• Target Stroke Honor Roll
• Joint Commission
• State Certifying Organizations

Mission Lifeline
Higher Volume of CSC Matters

### Table 2. Comparison of Demographics and Outcome of Low-, Medium-, and High-Volume Centers

<table>
<thead>
<tr>
<th>Variable</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age ≥65, % (SD)</td>
<td>58.1 (18.0)</td>
<td>61.9 (8.7)</td>
<td>63.1 (8.6)</td>
<td>0.274</td>
</tr>
<tr>
<td>Female, % (SD)</td>
<td>49.4 (16.2)</td>
<td>48.7 (7.4)</td>
<td>50.4 (4.7)</td>
<td>0.849</td>
</tr>
<tr>
<td>Transfers, % (SD)</td>
<td>23.4 (24.3)</td>
<td>38.4 (24.3)</td>
<td>51.3 (25.8)</td>
<td>0.004</td>
</tr>
<tr>
<td>% endovascular, mean (SD)</td>
<td>1.9 (1.3)</td>
<td>4.8 (2.2)</td>
<td>8.9 (4.9)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>tPA, % (SD)</td>
<td>42.8 (19.8)</td>
<td>34.8 (15.0)</td>
<td>26.4 (13.0)</td>
<td>0.011</td>
</tr>
<tr>
<td>tPA among all strokes, % (SD)</td>
<td>6.8 (2.4)</td>
<td>6.7 (3.2)</td>
<td>6.1 (3.4)</td>
<td>0.804</td>
</tr>
<tr>
<td>Hemorrhage rate, % (SD)</td>
<td>18.2 (12.9)</td>
<td>18.9 (7.1)</td>
<td>18.2 (4.5)</td>
<td>0.924</td>
</tr>
<tr>
<td>Mortality index (SD)</td>
<td>1.5 (0.9)</td>
<td>1.1 (0.5)</td>
<td>0.8 (0.3)</td>
<td>0.004</td>
</tr>
<tr>
<td>Discharge to home, % (SD)</td>
<td>16.1 (11.5)</td>
<td>16.9 (6.5)</td>
<td>21.5 (6.7)</td>
<td>0.155</td>
</tr>
<tr>
<td>Discharge to SNF, % (SD)</td>
<td>21.6 (12.5)</td>
<td>19.5 (8.4)</td>
<td>21.4 (8.0)</td>
<td>0.566</td>
</tr>
</tbody>
</table>

Florida Stroke Registry
Florida Stroke Registry

- Signed into law 2018
- Requires hospital participation in a Stroke Registry
FL Registry Measured Outcomes

General Performance Measures
1. Percent IV tPA Overall
2. Median DTN among those receiving IV tPA
3. Percent mRS 0-2 at discharge if received IV tPA
4. Percent mRS 0-2 at 90 days if received IV tPA
5. Percent symptomatic ICH after IV tPA
6. Percent symptmagic ICH 36 hr after IV tPA

Endovascular Performance Measures
1. Percent thrombectomy if arrive < 24 hr
2. Percent thrombectomy if arrive < 6 hr
3. Percent thrombectomy overall
4. Median DTG if received EVT
5. Median DTG if arrive < 6 hr & received EVT
6. Median DTG if b/w 6-24hr & received EVT
7. Percent mRS 0-2 at d/c if received EVT
8. Percent mRS 0-2 at 90 days if received EVT
9. Percent symptomatic ICH after IA tPA or EVT
[SAMPLE] Percent IV tPA Overall

17 Quarterly Dashboards
What The Hospitals See

Based on your overall “Defect Free Care” performance, your hospital ranked 54th among 70 participating hospitals in the FL-PR Stroke Registry in 2015.
2 Most Important Entities

EMS + NI

Start a Conversation
What’s in a Name?

Based on your overall “Defect Free Care” performance, your hospital ranked 54th among 70 participating hospitals in the FL-PR Stroke Registry in 2015.
Taming the Stroke Registries

Quality Improvement Through Collaboration and Innovation

Broward EMS Stroke Coalition

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