Best Practices in the ED

Chastity Orr MSN, RN
Stroke & Telemedicine Coordinator
No Disclosures
Emergency Medical Services (EMS)

• Starts before the patient arrives to the hospital

• Pre-notification
  - Cincinnati
  - Rapid Arterial Occlusion Evaluation (RACE)

• Committee
# Rapid Arterial Occlusion Evaluation

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Instruction</th>
<th>Result</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facial Palsy</td>
<td>Ask patient to show their teeth (smile)</td>
<td>Absent (symmetrical movement)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mild (slight asymmetrical)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Moderate to Severe (completely asymmetrical)</td>
<td>2</td>
</tr>
<tr>
<td>Arm Motor Function</td>
<td>Extending the arm of the patient 90° (if sitting) or 45° (if supine)</td>
<td>Normal to Mild (limb upheld more than 10 seconds)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Moderate (limb upheld less than 10 seconds)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Severe (patient unable to raise arm against gravity)</td>
<td>2</td>
</tr>
<tr>
<td>Leg Motor Function</td>
<td>Extending the leg of the patient 30° (in supine)</td>
<td>Normal to Mild (limb upheld more than 5 seconds)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Moderate (limb upheld less than 5 seconds)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Severe (patient unable to raise leg against gravity)</td>
<td>2</td>
</tr>
<tr>
<td>Head &amp; Gaze Deviation</td>
<td>Observe eyes and head deviation to one side</td>
<td>Absent (eye movements to both sides were possible and no head deviation was observed)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Present (eyes and head deviation to one side was observed)</td>
<td>1</td>
</tr>
<tr>
<td>Aphasia (R side)</td>
<td>Difficulty understanding spoken or written words. Ask patient to follow two simple commands: 1. Close your eyes. 2. Make a fist.</td>
<td>Normal (performs both tasks requested correctly)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Moderate (performs only 1 of 2 tasks requested correctly)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Severe (Cannot perform either task requested correctly)</td>
<td>2</td>
</tr>
<tr>
<td>Agnosia (L side)</td>
<td>Inability to recognize familiar objects. Ask patient: 1. “Whose arm is this?” (while showing the affected arm) 2. “Can you move your arm?”</td>
<td>Normal (recognizes arm, and attempts to move arm)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Moderate (does not recognize arm or is unaware of arm)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Severe (does not recognize arm and is unaware of arm)</td>
<td>2</td>
</tr>
</tbody>
</table>

*If Score > 0, Activate Stroke Alert*
Rapid Arterial Occlusion Evaluation (RACE) Stroke Assessment
Emergency Department

- Pre-notification
  - RACE Score

- Stroke Code/Alert

- Multi-Department Involvement

- Notifications
American Stroke Time Frames

<table>
<thead>
<tr>
<th>Step</th>
<th>Minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Door to MD</td>
<td>10 minutes</td>
</tr>
<tr>
<td>Door to CT Scan</td>
<td>20 minutes</td>
</tr>
<tr>
<td>Door to CT Interpretation</td>
<td>45 minutes</td>
</tr>
<tr>
<td>Door to EKG/Lab Results</td>
<td>45 minutes</td>
</tr>
<tr>
<td>Door to Alteplase</td>
<td>60 minutes</td>
</tr>
</tbody>
</table>

- For eligible patients, we need to strive to achieve door to Alteplase in < 45 minutes at least 75% of the time and <30 minutes at least 50% of the time.
Stroke Code

- **Stroke Stop**
  - Weigh
  - ABC assessment
  - GPH door to doc time 3 min 2018 Average

- **EMS to CT**
  - Within 1-2 min of arrival
  - GPH door to CT time 7 min 2018 Average (includes private vehicle)

- **Nursing**
  - Additional nurse

- **Lab**
  - Point of care
  - Special Packaging
  - GPH door to lab Results 37 min 2018 Average
Stroke Code

• Neurology Consult
  - TeleStroke
  - GPH return from CT to TeleStroke Provider 7 min 2018 Average

• CT Results
  - Bleed or No Bleed
  - GPH Door to CT results 28 min 2018 Average

• EKG
  - GPH Door to EKG results 24 min 2018 Average
Stroke Code

• Pharmacy
  - Tackle box
  - Alteplase
    • GPH door to Alteplase time 34 min 2018 Average
  - Saline
  - Blood pressure medication

• Patient and Family Support

• Now what??
  - Keep
  - Transfer
    • Tracking Door in Door out
Stroke Code Follow-up

- **Tracking**
  - What did we do good?
  - What could we do better?

- **Communication**
  - Follow up with all involved

- **Committee evaluation**
## Committee Evaluation

<table>
<thead>
<tr>
<th>METRICS</th>
<th>JAN</th>
<th>FEB</th>
<th>MAR</th>
<th>APR</th>
<th>May</th>
<th>JUN</th>
<th>JUL</th>
<th>AUG</th>
<th>SEPT</th>
<th>OCT</th>
<th>NOV</th>
<th>DEC</th>
<th>IVI Unity Ave</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOOR TO MD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>#DIV/0!</td>
</tr>
<tr>
<td>Goal &lt; 10 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DOOR TO CT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>#DIV/0!</td>
</tr>
<tr>
<td>Goal &lt; 20 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DOOR TO LYTIC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>#DIV/0!</td>
</tr>
<tr>
<td>Goal &lt; 60 minutes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CT: Door to result</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>#DIV/0!</td>
</tr>
<tr>
<td>Goal: &lt; 45 min</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OPT CT: Door to result</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>#DIV/0!</td>
</tr>
<tr>
<td>Goal: 95% every quarter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CXR: Door to result</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>#DIV/0!</td>
</tr>
<tr>
<td>Goal: &lt; 45 min</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LABS: Door to result</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>#DIV/0!</td>
</tr>
<tr>
<td>Goal: &lt; 45 min</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Case Study

• 68 year old female, witnessed stroke
  - Facial droop
  - Right arm almost no movement
  - Right leg minimal movement
  - Dysarthria
  - Aphasia
  - Unable to answer 1 question
  - Sensory loss

• RACE and Cincinnati
  - Positive
  - 5
Case Study

• CT Scan
• Alteplase Candidate?
• Transfer?
STROKE CODE
R.A. 68 yr old Female

Upon arrival patient had aphasia, facial droop, dysarthria, difficulty answering questions, unable to move right arm, minimal right leg movement, and mild sensory loss. Patient transferred for Thrombectomy. When patient discharged from the hospital he had some numbness in a couple fingers on his right hand and slight weakness in his right hand.

- 2/11/19 @ 15:30 LKW
- 5 RACE Score
- 16:06 Arrived @ GPH
- 16:07 Ed MD @ bedside
- 16:19 Neurologist @ bedside
- 16:07 Patient to CT
- 16:18 back from CT
- 11 NIHSS

STROKE TEAM
North Platte Fire
- Dr. Query
- Dr. Lampe
- Susan, RN
- Jennifer, RN

Diagnostic Imaging
Pharmacy
Lab

Door to Dr: 1 minutes
Door to CT/CTA: 1 minutes
Door to Labs resulted: 38 minutes
Door to t-PA: 29 minutes

Goal: 10 minutes
Goal: 25 minutes
Goal: 45 minutes
Goal: 60 minutes

CT head showed

IMPRESSION: Atrophy and white matter change. Negative for acute changes.
Chastity Orr MSN, RN
Great Plains Health
Stroke and Telemedicine Program Coordinator

601 West Leota
North Platte, Neb.

orrc@gphealth.org

308.568.8507
References


