Decreasing Door to Needle Time
A Collaborative Approach

Angela McCall-Brown
Stroke Nurse Practitioner
Overlook Medical Center
Disclosures

- Nothing to disclose
What is your hospital's average Door to t-PA time?

1. Greater than 60 minutes
2. Less than 60 minutes but greater than 45 minutes
3. I don’t know
4. Less than 45 minutes
Improving Stroke Care

- Six Sigma Methodology
  - 4 team members
    - Stroke nurses (2)
    - Data analyst (2)
    - ED participation in later stages

- Goal: reducing door to t-PA administration
  - National standard for t-PA administration 60 minutes
  - Target Stroke Award given for those hospitals who meet this measure 50% of the time
  - Baseline data for Door to Needle (DTN) 60.5 minutes
  - Institutional goal for DTN of 45 minutes
Where did we start?

- Six Sigma
  - Shift differentials
  - Physician practices
  - Telestroke consults
  - Registration process
  - Focus on evening shift, Door to CT, CT results &
    - t-PA removal from the Pyxis

Determine which were the top outliers to improve our process

- We could improve our process 83% by fixing our Door to CT, CT results, and t-PA removal from the Pyxis
Does your hospital transport your patients directly to CT on the EMS stretcher?

1. Yes
2. No
Process

- Collaboration between:
  - EMS
  - Stroke Team
  - ED Physicians and Nurses
  - Registrar
  - CT Scan
  - Pharmacy
  - Laboratory
- Quarterly to Monthly Meetings
- Pilot Set up
- EMS notification
April 9, 2013
- Email and Letters sent to EMS
- Increase meeting frequency
- Change of information needed for the notification of the Stroke Team
- Registrar notification by charge nurse
- CT staff readiness
Putting Actions into Words

- Pre-notification of Stroke Team
- Patients triaged immediately while on EMS stretcher with a quick MD assessment
- Quick Registration
- Taken to CT on EMS stretcher
- Stroke team meets in CT, report from EMS
- Pharmacy available for t-PA administration
- Back in the ED: NIHSS, Labs, t-PA if eligible
The Team was READY!

- March 27, 2013
- 69 year old female
- PMH: smoker and had not been to a physician in years
- CC: fell trying to get up from a chair; left sided weakness, left facial & dysarthria
- DTN: 22 minutes
- DTC: 3 minutes
- DTL: 21 minutes
- NIHSS: 10
- NIHSS: 7
Stroke Pride Awards

- Staff recognized each month at our CSC Stroke Steering with quickest door to needle
- In 2014 continue to recognize quickest DTN with reinforcement of the 45 minute goal

Recognitions
- Awards
- Dunkin Donut Cards
- Pictures at the Stroke Steering
- September Issue of Overlook View top 5 EMS Squads recognized!
Healthy Competition

- Emergency Department
  - Do I have the best time?

- EMS
  - Did my patient get t-PA and how fast was it given?

- MDs
  - What’s the quickest time this month?
September 27, 2013
90 year female
PMH: HTN
CC: collapsed while at a funeral; right sided weakness, right facial, and dysarthria
DTN: 16 minutes
DTC: 5 minutes
DTL: 22 minutes
NIHSS: 17
NIHSS: 0
Percent of Cases with DTN less than 60 minutes

- Baseline Six Sigma Data: 64%
- Pilot with Pre-Notification: 93%
- Cases without Pre-Notification: 80%
Average Door to Needle Times

- Baseline Six Sigma Data: 61
- Pilot with Pre-Notification: 38
- Cases without Pre-Notification: 47
Average Door to CT

- Baseline Six Sigma Data: 29
- Pilot with Pre-Notification: 7
- Cases without Pre-Notification: 21
Conclusion

- Efforts to decrease Door to t-PA, by decreasing our Door to CT has lead to a statistically significant decrease in our DTN times.
- Without the collaboration of each part of our team we could not have made it happen.
- Pre-notification is key to this process, but all of our patients have benefited from a heighten awareness to deliver the care in a timely fashion.
- Our overall time for all of our patients in 2013 since the pilot launch is 19 minutes under the national average!
Questions