Target: Stroke™ in the Real World

Driving Down Door-to-Needle Times through Hospital Experience and Best Practice Sharing.
Webinar Outline

- Opening and Status Of Target: Stroke
- Review of Target: Stroke 10 Best Practice Strategies
- Hospital Perspective and Best Practice Sharing from Two Target: Stroke Honor Roll Sites
- Audience Question and Answer

Speaker Panel

Target: Stroke National Committee Volunteers

- Shyam Prabhakaran, MD, MS
  - Associate Professor of Neurology and Director of Stroke Research at Northwestern University.
- David Tong, MD, FAHA, FAAN
  - Medical Director CPMC Comprehensive Stroke Care Center Director CPMC Center for Stroke Research

Target: Stroke Hospital Honor Roll Speakers

- Bellin Health Care System – Green Bay, Wisconsin
  - Kathy Polum RN
    - Neuroscience Coordinator
- Mercy General Hospital – Sacramento, California
  - Alan Shatzel, Jr., DO
    - Chairman, Dept of Medicine, Medical Director Mercy Neurological Institute
  - Deidre Wentworth, MSN RN
    - Manager Mercy Neurological Institute/Mercy Stroke Center
Status of Target: Stroke

50%

Door To IV rt-PA in 60 Min

percent of patients

90%
80%
70%
60%
50%
40%
30%
20%
10%

This represents the most current data in the Get With The Guidelines®-Stroke database as of August 2, 2011.

Shyam Prabhakaran
MD, MS, FAHA
Target: Stroke

A national quality improvement initiative of the American Heart Association/American Stroke Association to improve the care of stroke

Building on Success

GWTG-Stroke

Brain Attack Coalition

Mission: Lifeline
Current guidelines for the management of patients with acute ischemic stroke published by the AHA/ASA include specific recommendations for the administration of IV rt-PA.

Despite its effectiveness in improving neurological outcomes, many patients with ischemic stroke are not treated with IV rt-PA, because they arrive late or because of delays in assessment/administration of IV rtPA.

Earlier administration of IV rtPA after the onset of stroke symptoms is associated with greater functional recovery.

One of the potential approaches to increase treatment opportunities and improve stroke outcomes is to provide this treatment in a more timely fashion after patient arrival (reduce the door to needle time for IV rt-PA).
Door-to-IV rt-PA within 60 minutes

2009: 27.4%
Goal: 50.0%

GWTG-Stroke Database, data on file DCRI
Target: Stroke January 2010 to March 2012

Rates of DTN times ≤ 60 min

% Subjects

Months 2010-2012
1. Advance Hospital Notification by EMS
2. Rapid Triage Protocol and Stroke Team Notification
3. Single Call Activation System
4. Stroke Tools
5. Transfer Directly to CT Scanner
6. Rapid Acquisition and Interpretation of Brain Imaging
7. Rapid Laboratory Testing (including point-of-care testing if indicated)
8. Mix IV rtPA Medication Ahead of Time
9. Rapid Access to IV rtPA
10. Team-Based Approach
11. Prompt Data Feedback
Percent of Cases of Advanced Notification by EMS by Patients Transported by EMS from Scene
Time from Patient Arrival to Stroke Team Activation

January 1, 2011 to March 31, 2012
= 35,041 Patients
Best Practice Strategy # 2

Time from Stroke Team Activation to Stroke Team Arrival

January 1, 2011 to March 31, 2012 = 34255 Patients

0-10 min
11-15 min
16-20 min
11-15 min
> 65 min
...
Best Practice Strategy # 4

% Door-to-CT in Less than 25 minutes

January 2011-March 2012
January 2010 to March 2011
= 77273 patients
Time from Lab Tests Ordered to Completed

January 2011 to March 2012
= 71289 patients

[Bar chart showing time intervals and corresponding percentages]
Kathy Polum, RN
Neuroscience Coordinator

Bellin Hospital
Green Bay, WI (Go Pack!)
Target: Stroke Honor Roll Award

Bellin Health is one of only six Wisconsin Hospitals of the American Heart Association/American Stroke Association’s Target: Stroke Honor Roll Award 2012

Bellin Hospital Data:

1/1/2011 to 12/31/2011

- Total number of ischemic stroke patients: 145
- Total number of ischemic stroke patients treated with rt-PA: 11 (7.1%)
- Percent of acute ischemic stroke patients treated with IV rt-PA with DTN < 60 minutes
  Numerator/Denominator: 6/11 (54.5%)
- Median DTN for all Acute stroke patients treated with IV rt-PA = 59 minutes.
How we arrived on the Target: Stroke Honor Roll-Teamwork!
Best Practices

Advance Hospital Notification by EMS

• EMS participation on Stroke Committee
• EMS education
• EMS calls Code Stroke from field (6 hours since last known well)

Rapid Triage Protocol and Stroke

• Annual Stroke education for ED nurses emphasizes Target: Stroke
• Nurse can call code stroke and notifies ED provider
• Preprinted stroke protocols

Team Notification/ Single Call Activation System

• Code stroke activates CT, pharmacy and rapid response nurse
• ED MD does rapid assessment. If no obvious exclusion criteria, Neurologist paged by ED MD
Best Practices

Stroke Tools

- tPA orders: Weight based reference delineating total dose, bolus dose, drip rate, drip volume (accommodates priming of tubing)

Rapid Laboratory Testing-thrombolytic therapy:

- Triage orders include lab tests.
- tPA not delayed for test results unless pertinent to patient history
Best Practices

Rapid Acquisition and Interpretation of Brain Imaging

- CT sits on Stroke Committee
- CT activated with Code Stroke page (pre-notified if EMS call)
- To CT from ED as soon as CT ready (minutes). Emphasized during education for ED.
- 2011 Door to CT < 25 min = 82%
- 2011 Door to CT interpret < 45 min = 82%
- 320 slice CT located in ED. Perfusion and angiography available
- Next step is move directly to CT from ambulance garage
Best Practices

Rapid Access to Intravenous rt-PA

- Pharmacy tPA tackle box: tPA, tPA orders, tubing, flush fluids

Pre-Mix rt-PA Medication

- Gap: Delays found when tPA not premixed. Met with pharmacy: Verified processes/reimbursements

Team-Based Approach

- Taught the ED team to watch the clock. Use EMR to track the golden hour (HUGE). (Used the T system. Move to EPIC in June 2012. Found similar clock in EPIC to replicate this process).

Prompt Data Feedback

- ED Code Stroke member provides feedback during the code when available
- Cases reviewed with feedback
- Way-to-go emails sent by Stroke Coordinator to team/administration/EMS for wins
- EMS encouraged to call for feedback. Some ED providers call the team directly. Gap: not consistent
Greetings Stroke team, **Team work** has lead us to another Door to Needle in less that 60 minutes!

Recently we had a patient arrive an hour and 10 minutes into their acute stroke symptoms. Within two minutes from the time the patient hit our doors, **Ashley H. RN** and the **ED staff** activated the stroke protocol and **Dr. C.** evaluated the patient. The CT scan was completed within 5 minutes, it was immediately read by **Dr. G.** and reported back to **Dr. C.**, who in consultation with **Dr. H.** (who I understand ran from home to Bellin ED) completed the assessed including review of hx, labs and CT, and prescribed tPA! After a quick mix of the med by the **Pharmacy Team** who was standing outside the door and led by **Colleen G., SWAT RN Gail B.** and **ED RN Lori F.** administer the med in a record time of 41 minutes.

- **That is our BEST time yet! 4/20/2012**

- Patient is recovering well with cares provided by **Ashley H ED RN, Jackie L, RN, and Pete S RN** in ICU have made sure/to date all our core measures, vital signs and neuro checks have been completed as per our protocol. Most importantly the patient has improved from an NIHSS of 12 on admission to NIHSS of 4 today.

Fantastic!!!! Thank you for your hard work and dedication.

7/25/2012
Kathy P.
Here's the scene:

- 11:30 Pt has acute onset garbled speech, left mouth droop, left sided weakness. Significant other immediately calls 911
- 11:57 County Rescue EMS pre-notifies the ED and a code stroke is called
- 12:04 Pt arrives to ED
- 1204-12:20 Pt gets VSS, neuro checks (NIHSS 10), Labs, IV line, EKG, CT scan of head, and neuro consult
- 12:26 tPA ordered
- 12:33 tPA administered. **That's 29 minutes DTN, 63 minutes from last known well**
- Pt admitted to ICU. **40 minutes into her tPA administration she has already improved to an NIHSS 3**

Congratulations to the team!! EMS personnel Sinkler and Thiel, ED staff: Dr. H, Jason S, Sara L, Becky W, Lori F, Swat: Liz P, CT personnel Dr. A, Cory B and Diedra F, Neurologist Dr. H, Pharmacist Claire

You guys ROCK!

Lori Fayas
Target: Stroke
Hospital Perspective

Alan Shatzel, DO
• Chairman, Dept of Medicine,
  Medical Director Mercy Neurological Institute

Deidre Wentworth, MSN, RN,
• Manager Mercy Neurological Institute/Mercy Stroke Center

Mercy Neurological Institute
Sacramento, CA
Best Practice Strategies

- Rapid Triage Protocol and Stroke Team Notification
- Single Call Activation System
- Team-based approach
Rapid Triage Protocol and Stroke Team Notification

Initial protocol:

• Stroke alert packet/checklist available; located in a binder on a shelf
• Target times not identified
• Roles of each team member not clearly defined – focus was more on what to do
• Stroke Team pager – stroke coordinator first call

Target Stroke post-implementation:

• Stroke alert packets readily available and visible
• Target times identified on checklist
• Roles clearly defined – ED nurse identified as Stroke Alert team leader
• “Stroke Alert” call system implemented
Single Call Activation

**Initial protocol:**

- ED paged stroke coordinator directly, who then phone screened patient with ED MD
- Stroke coordinator contacted on-call neurologist; responded in person 24/7
- ED ordered STAT CT scan

**Target: Stroke post-implementation:**

- ED calls hospital operator who overhead announces “Stroke Alert”, stroke coordinator and CT tech receive a page
- Stroke coordinator still phone screens patient with ED MD and pages neurologist, but…
- Neurologist responds directly to ED/CT scanner if in-house; telemedicine use in the ED if neurologist not readily available in person
Team-Based Approach

**Target: Stroke pre-implementation:**
- Everyone relied on the Stroke coordinator; care of the pt was transferred to coordinator
- ED nurses not educated on the NIHSS
- Team was identified as coordinator and Neurologist

**Target: Stroke post-implementation:**
- Focused re-education of ED nurses on NIHSS and role in stroke alert process
- Neurologist directly responds to ED/CT scanner when “Stroke Alert” called
- Stroke coordinator does not respond in-person 24/7
- ED RN and MD key members of the team
Door-to-Needle Times

**Target: Stroke pre-implementation:**

median time  79.5 mins

**Target: Stroke post-implementation:**

median time  50.5 mins
TPA TIME Analysis

21:47
Seen by ED MD

21:51
CT head/neck w/ contrast ordered

22:07
Stroke alert called to Neuro MD

22:01
Pt to CT

22:17
CT complete

22:13
Neuro MD call to ED

22:25
Neuro MD at bedside per RN note

22:22
CT resulted

22:26
CT read

22:38
Decision to Administer t-PA

22:41
t-PA order placed

22:45
Label printed in Pharm

22:38 - 22:55
17 minutes

21:41
Patient arrives

21:52
21:52 - 22:07
15 minutes

22:01
Stroke alert called by Operator

22:13
Neuro MD call to ED

22:25
Neuro MD at bedside per RN note

22:38
Decision to Administer t-PA

22:41
t-PA order placed

22:45
Label printed in Pharm

22:38 - 22:55
17 minutes

21:41
21:41 - 22:13
Door to Neuro Expertise = 32 minutes

22:13
Neuro MD call to ED

22:25
Neuro MD at bedside per RN note

22:38
Decision to Administer t-PA

22:41
t-PA order placed

22:45
Label printed in Pharm

22:38 - 22:55
17 minutes

21:41
21:41 - 22:26
Door to CT Read = 45 minutes

22:26
CT read

22:41
22:45
Label printed in Pharm

22:38 - 22:55
17 minutes

21:41
21:41 - 22:55
Door to Drug = 74 minutes

22:55
t-PA given per MD note
Questions?

Type question into the Q&A tab at the top of your screen.

Additional questions email sara.camp@heart.org

Download this slide deck within 5-7 working days from:

www.strokeassociation.org/targetstroke

Thank you for joining today's webinar!