• **QUality Enhancement for Speedy Thrombolysis for Stroke (QUESTS) has 3 main goals:**
  
  • Provide professional education using the AHA’s Target: Stroke Initiative for physicians at PSCs to improve use of thrombolysis and improve its timely delivery in ischemic stroke patients
    • 20% of IS treated with tPA
    • > 50% achieve DTN < 60 min
  
  • Provide EMS education to improve field diagnosis and increase pre-notification of suspected stroke patients being transported to Chicago PSCs
    • > 95% EMS pre-notification
  
  • Mount a comprehensive multi-lingual education program on stroke awareness for Chicago’s residents, targeting at-risk and minority groups specifically, that will result in a greater understanding of stroke symptoms and lead to an increase in 911 calls for stroke
    • > 50% of strokes call 911 (EMS)
Funding Available for Hospitals:

- \(~$5000\) per site for GWTG-S (pre & post project measurement), super-user participation, & EMS pre-hospital data elements

- \(~$1000\) per site for community stroke education event

- \(~$1500\) Target Stroke Honor Roll Incentive

- Current non-GWTG hospital stipend for GWTG-S (Stroger, UIC, Swedish Covenant & Holy Cross)
✅ **Register** your hospital with AHA’s [Target Stroke](#) Initiative at no cost

✅ Provide stroke team member **contacts to AHA**

✅ Identify **who** should receive AHA contract & **sign** for **your hospital**

✅ **Sign** and return **AHA contract** including instructions for where check should be sent & **W-9 form**

✅ **Sign Get With The Guideline-Stroke contract and/or amendment** to existing contract to Outcome, Inc.

✅ Contact Outcome to **turn on GWTG-S EMS tab** on your Patient Management Tool (No associated cost)

✅ Enter GWTG-S for 100% acute ischemic strokes from **Jan. 1, 2013 thru Dec. 31st, 2013**

✅ **Enter EMS data** for all CFD delivered stroke patients from **Jan. 1, 2013- Dec. 31st, 2013**.

✅ Schedule 1 ½ hour QUESTS **site visit** with Kathleen O’Neill by **May 1st**.

✅ Identify **community education event(s)** and notify AHA two weeks prior to event

✅ **Provide number** of educational **materials** distributed and/or number of **attendees**

✅ Identify stroke team member(s) to represent your hospital at monthly **RSAS** meeting/conference call (last Tues. of month at 2:00)

✅ **Share** best practices, protocols & strategies to improve DTN times, **EMS feedback & recognition** and increase community stroke education.
Get With The Guidelines-Stroke Registry & PI Tool

- GWTG-S “super-user” account allows aggregation of all de-identified data by AHA staff.
- GWTG contract amendment to be provided for current GWTG-S users. No cost to hospitals.
- New GWTG-S hospitals will receive contract & super-user contract amendment.
- Complete all EMS data elements for all CFD stroke patients. (*Work with EMS coordinators to locate run sheets*)
- All GWTG-S hospitals will have access to Region XI benchmark group.
GWTG “Super-User”
Difference in AHA user functionality

AHA Super-user

AHA Field Staff
# EMS GWTG Data Elements (Acute strokes from CFD only)

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient care record available at time of patient arrival?</td>
<td>☐ Yes ☐ No/ND</td>
</tr>
<tr>
<td>Patient care record available at a later time during hospitalization?</td>
<td>☐ Yes ☐ No/ND</td>
</tr>
<tr>
<td>EMS Agency Name or Number</td>
<td>__________________☐ Unknown</td>
</tr>
<tr>
<td>Run/Sequence Number</td>
<td>__________________☐ Unknown</td>
</tr>
<tr>
<td>Date/Time call received by responding EMS agency</td>
<td><strong><strong>/</strong></strong>/____  __: ___ ☐ MM/DD/YYYY only ☐ Unknown</td>
</tr>
<tr>
<td>Dispatched as suspected stroke?</td>
<td>☐ Yes ☐ No ☐ Not Documented</td>
</tr>
<tr>
<td>Arrival at scene by EMS responding agency, Date/Time:</td>
<td><strong><strong>/</strong></strong>/____  __: ___ ☐ MM/DD/YYYY only ☐ Unknown</td>
</tr>
<tr>
<td>Blood Glucose level (mg/dL):</td>
<td>__________________☐ Too High ☐ Too Low</td>
</tr>
<tr>
<td>Question</td>
<td>Yes</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>-----</td>
</tr>
<tr>
<td>Date/Time patient last known to be well as documented by EMS:</td>
<td></td>
</tr>
<tr>
<td>Date/Time of discovery of stroke symptoms as documented by EMS:</td>
<td></td>
</tr>
<tr>
<td>Pre-hospital stroke screen performed?</td>
<td></td>
</tr>
<tr>
<td>Suspected stroke?</td>
<td></td>
</tr>
<tr>
<td>Was a Thrombolytic Checklist used?</td>
<td></td>
</tr>
<tr>
<td>How was destination decision made?</td>
<td></td>
</tr>
</tbody>
</table>

- Directed to a designated stroke center by protocol
- Directed to nearest facility by protocol
- Patient/Family choice
- Online Medical Direction
- Closest facility
- Other
- Unknown/Not Documented
• 5 completed site visits

• 7 hospitals scheduled in next month or working to schedule date/time

• 2 hospitals have not contacted AHA to schedule as of yet

• Goal = 15 site visits completed by May 1\textsuperscript{st}, 2013

• Survey completed with stroke team encourages discussion

• Aggregate survey results will be shared & used to help direct QUESTS initiative focus
Main results of survey and on-site visits

• Most sites activate stroke team after ED physician evaluation
• None of the sites administer tPA routinely before labs
• None of the sites pre-mix tPA
• None of the sites have a direct-to-CT triage protocol
• Consent issues common
• Consider activation of stroke team earlier
• When EMS or base station calls PSC with suspected stroke
• At triage, nurse could use **ROSIER scale**

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Has there been loss of consciousness or syncope?</td>
<td>Yes (-1 point)</td>
</tr>
<tr>
<td>2) Has there been seizure activity</td>
<td>Yes (-1 point)</td>
</tr>
<tr>
<td>Is there a new acute onset (or on awakening from(sleep))</td>
<td>No (0 point)</td>
</tr>
<tr>
<td>In the following:</td>
<td></td>
</tr>
<tr>
<td>Asymmetrical facial weakness</td>
<td>Yes (+1 point)</td>
</tr>
<tr>
<td>Asymmetrical arm weakness</td>
<td>Yes (+1 point)</td>
</tr>
<tr>
<td>Asymmetrical leg weakness</td>
<td>Yes (+1 point)</td>
</tr>
<tr>
<td>Speech disturbance</td>
<td>Yes (+1 point)</td>
</tr>
<tr>
<td>Visual field defect</td>
<td>Yes (+1 point)</td>
</tr>
</tbody>
</table>

Patients total score =
TOTAL SCORE ............ (-2 to +5)

**NB**: Stroke is unlikely but not excluded if total score is < zero

Provisional Diagnosis Stroke  
Non Stroke  (specify).....

**IF STROKE IS LIKELY CONTACT STROKE TEAM**
#2 Pre-mixing tPA

- Consider pre-mixing tPA meeting criteria:
  - < 4.5 hours from onset
  - Measurable deficit persisting on initial screen
  - (CT head negative for hemorrhage)
  - Glucose 50-450 mg/dL
  - Genentech return policy
• Consider treating with tPA before labs are back
  • 0.4% chance of unsuspected coagulopathy (Rost, Neurology 2009)
  • 0.3% chance of unsuspected thrombocytopenia (Cucchiara, Stroke 2007)

• Use a screening checklist:
  • Taking warfarin?
  • Taking heparin or low-molecular weight heparinoid?
  • On hemodialysis?
  • Active malignancy?

• If yes to any of the above, await labs and consider POC tests if average time to labs > 45 minutes
Direct to CT protocol

Merotjia Neurology 2012
## Direct to CT protocol

### A Pre-VSA Acute Stroke Protocol

- **Patient Arrival**

### B Post-VSA Acute Stroke Protocol

- **Patient Arrival**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>123</td>
<td>77</td>
</tr>
<tr>
<td>Excluding 9 Stroke Mimics</td>
<td>59 [45, 70] 3.3%</td>
<td>39 [28, 56] 2.9%</td>
</tr>
</tbody>
</table>

### Door-to-Needle Time, min*

- Pre-VSA: 59 [45, 70]
- Post-VSA: 39 [28, 56]

### Symptomatic ICH

- Pre-VSA: 3.3%
- Post-VSA: 2.9%

### P-value

- Pre-VSA to Post-VSA: P<0.0001
- Pre-VSA to Post-VSA (P=1.0)

---

**Trauma Bay**

- **Neuro MD**: Completes NIHSS, Obtains witness for time of onset, calls Chief Resident to make decision
- **RN**: BP med administration, Calculates dose and prepares tPA

**Neuro MD**: Calls Chief Resident to make decision

**TPA Delivery**
1. We believe you are having a stroke due to a clot blocking an artery in your brain.
2. We are recommending treatment with IV tPA which is the only FDA approved treatment for thrombolysis or "clot busting".
3. Studies have shown that if you receive IV tPA, you are at 11 times more likely to be helped than harmed by the drug (refer to chart).
4. There is a risk of bleeding (use GRASPS score) with this medication. This could lead to significant worsening but we believe the benefit outweighs the risk.
5. The benefit of tPA decreases with time so the sooner we are able to treat you, the better.

Any questions?
GRASPS score
(individualized risk)

http://www.strokeassociation.org/STROKEORG/Professionals/Get-With-The-Guidelines-sICH-Calculator_UCM_441092_SubHomePage.jsp

<table>
<thead>
<tr>
<th>Points</th>
<th>sICH risk</th>
<th>Points</th>
<th>sICH risk</th>
<th>Points</th>
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<tbody>
<tr>
<td>45</td>
<td>1%</td>
<td>64</td>
<td>3%</td>
<td>83</td>
<td>11%</td>
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<td>3%</td>
<td>84</td>
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<tr>
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<td>9%</td>
<td>100</td>
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</tr>
<tr>
<td>63</td>
<td>2%</td>
<td>82</td>
<td>10%</td>
<td></td>
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</tr>
</tbody>
</table>

Menon BK Stroke 2012
TARGET: STROKE
TIME LOST IS BRAIN LOST.

STROKEASSOCIATION.ORG/TARGETSTROKE
**Did the hospitals on your list earn a place on ours?**

One minute of brain ischemia can kill 2 million nerve cells and 14 billion synapses. That means the more time that elapses before intravenous thrombolysis, the slimmer the odds of a good outcome. The upside is a great opportunity to improve stroke patient outcomes simply by providing the right treatment, right away.

Target: Stroke was created to help hospital teams seize that opportunity through door-to-needle (DTN) times of 60 minutes or less. The campaign includes a wealth of resources and tools — provided free of charge — for accomplishing the goal, along with eligibility for public recognition.

**PUT TARGET: STROKE TO WORK with these simple steps:**

1. Register by completing the baseline survey and registration form on the final page. (Word document of Survey)
2. Implement system improvements to meet the Target: Stroke goal.
3. Submit your Target: Stroke Honor Roll application. (Please note that the baseline survey must be completed in its entirety to be eligible.)
Community Stroke Education Event

• $1000 stipend to support stroke education & awareness event targeting high risk, diverse Chicago communities
• Stipend may be used to support FTE and/or educational materials
• Notify AHA of event date, location & target audience
• Distribute and collect a community stroke assessment survey to attendees
• Provide summary of event to AHA including number of attendees and/or materials distributed
• AHA Hand-out includes list of compiled stroke resources
• QUESTS web site development in progress
• Genentech – EMS, hospital & consumer educational materials
Feedback, Comments, Suggestions….

- Invite Wash U to present to group
- Collaborative community education project or pilot
- EMS feedback and recognition
- Other?
QUESTS Initiative

Questions?

Kathleen O’Neill, MHA
Regional VP, Quality & Systems Improvement
Kathleen.oneill@heart.org
312-476-6622

Shyam Prabhakaran, MD, MS
Project Medical Director
shyam.prabhakaran@northwestern.edu
312-503-2994
QUESTS Initiative
50% of patients arrive at the hospital within 60 minutes of the onset of symptoms.

Door To IV rt-PA in 60 Min