NYS Department of Health Coverdell Stroke Quality Improvement and Registry Program

An Overview with Considerations in Care Transitions for the Acute Stroke Patient

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Objectives

• Highlight importance of stroke care in NYS
• Review requirements of NYS Stroke Designation
• Discuss benefits of designation over non designation
• Introduce the CDC Paul Coverdell Stroke Quality Improvement and Registry Program
• Discuss Role of Long Term Care Facilities and Home Care agencies in improving outcomes in stroke patients
After heart disease, cancer, COPD; American Heart Association.

Heart Disease and Stroke Statistics-2010 Update.
Time is Brain

• When a stroke occurs 1.9 MILLION neurons are lost per minute
• Stroke victims lose an average of 1.2 BILLION neurons per stroke
Brain Attack Coalition Recommendations: Establishing a Standard of Care (2000)

Conclusions: Randomized clinical trials and observational studies suggest that several elements of a stroke center would improve patient care and outcomes.

Key elements of primary stroke centers include:
1. Acute stroke teams
2. Stroke units
3. Written care protocols
4. An integrated emergency response system
5. Availability and interpretation of CT scans 24 hours every day
6. Rapid laboratory testing.
7. Administrative support
8. Strong leadership
9. Continuing education
Main Goals of Designation:

- The stroke center has been established for the purpose of
  - Monitoring the care delivered to stroke patients,
  - Improving the quality of care and
  - Moving patients through the initial acute-care phase in a timely fashion in both pre-hospital and in the Emergency Department
- Ensure that patients receive proper care while in hospital.
- Proper education and discharge procedures.
Designation Requirements for New Stroke Center

1. **STROKE TEAM**
   - Qualified physicians, physician assistants, nurse practitioners and registered nurses in the Emergency Department, ICU and Stroke Unit

2. **EDUCATION**
   - Pre-hospital staff – EMS
   - Stroke Medical Director
   - Stroke team (ED, ICU and Stroke Unit)
   - All other professionals caring for stroke patients
   - Patient and family
   - Community

3. **24/7 CAPABILITIES**
   - Stroke Unit – identification of at least 2 beds with monitoring equipment
   - Neuro Imaging Services
   - Lab Services
   - Neurosurgery (on site or through transfer agreement)

4. **QUALITY ASSURANCE/DATA/REGISTRY**
   - QA of Stroke incorporated into overall hospital QA
   - Stroke Center must submit quality data regarding time targets and performance measures
   - Stroke Center agrees to participate in a registry
Time Targets

• Door to MD – **10 min**
• Door to Stroke Team – **15 min**
• Door to Brain Imaging Completed – **25 min**
• Door to Brain Imaging Reported/Read – **45 min**
• Door to IV t-PA – **60 min**
Performance Measures

- IV t-PA arrive by 2 treat by 3
- Early Antithrombotics
- VTE Prophylaxis
- Antithrombotics at discharge
- Anticoagulant for Afib/Aflutter
- LDL 100 or ND-Statin
- Smoking Cessation
- Dysphagia Screening
- Stroke Education
- Rehab Considered
- Initial NIHSS (on admission)
- Modified Rankin at Discharge (NIHSS on discharge still available for historical purposes)
### PERFORMANCE MEASURES - 2013

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Number of Hospitals with 100% Compliance in Performance Measures - 2013
Study published in JAMA shows that Designated Stroke Centers have lower mortality rates than other non-designated Hospitals

**Association Between Stroke Center Hospitalization for Acute Ischemic Stroke and Mortality**

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**Context** Although stroke centers are widely accepted and supported, little is known about their effect on patient outcomes.

**Objective** To examine the association between admission to stroke centers for acute ischemic stroke and mortality.

**Design, Setting, and Participants** Observational study using data from the New York Statewide Planning and Research Cooperative System. We compared mortality for patients admitted with acute ischemic stroke (n=30,947) between 2005 and 2006 at designated stroke centers and nondesignated hospitals using different distance to hospitals as an instrumental variable to adjust for potential pre-hospital selection bias. Patients were followed up for mortality for 1 year after the index hospitalization through 2007. To assess whether our findings were specific to stroke centers and nondesignated hospitals.

**Main Outcome Measure** Thirty-day all-cause mortality.

**Results** Among 30,947 patients with acute ischemic stroke, 15,297 (49.4%) were admitted to designated stroke centers. Using the instrumental variable analysis, admission to designated stroke centers was associated with lower 30-day all-cause mortality (10.1% vs 12.5%; adjusted mortality difference, -2.5%; 95% confidence interval [CI], -4.5% to -0.4%; P < .001) and greater use of thrombolytic therapy (4.8% vs 1.7%; adjusted difference, 2.2%; 95% CI, 1.3% to 2.8%; P < .001). Differences in mortality also were observed at 1-day, 7-day, and 1-year follow-up. The outcome differences were specific for stroke, as stroke centers and nondesignated hospitals had similar 30-day all-cause mortality rates among those with gastrointestinal hemorrhage (5.0% vs 5.8%; adjusted mortality difference, +0.8%; 95% CI, -0.6% to 2.3%; P = .50) or acute myocardial infarction (10.5% vs 12.7%; adjusted mortality difference, +0.1%; 95% CI, -0.9% to 1.1%; P = .83).

**Conclusion** Among patients with acute ischemic stroke, admission to a designated stroke center was associated with modestly lower mortality and more frequent use of thrombolytic therapy.

JAMA. 2011;305(4):373-380

www.jama.com

Stroke is the leading cause of serious long-term disability and the third leading cause of mortality in the United States. Responding to the need for improvements in acute stroke care, the Brain Attack Coalition (BAC) published recommendations for the establishment of primary stroke centers in 2000. In December 2003, the Joint Commission began certifying stroke centers based on BAC criteria. Now, nearly 700 of the 5000 acute care hospitals in the United States are Joint Commission-certified stroke centers. Some states, such as New York, Massachusetts, and Florida, have established their own designation programs using the BAC core criteria.

Despite widespread support for the 
Paul Coverdell National Acute Stroke Registry: Mission

• Measure, track, and improve the quality of care and access to care for stroke patients from onset of stroke symptoms through rehabilitation and recovery
• Decrease rate of premature death and disability from acute stroke
• Eliminate disparities in care
• Support development of stroke systems of care that emphasize quality of care
• Improve access to rehabilitation and opportunities for recovery after stroke
• Increase the workforce capacity and scientific knowledge for stroke surveillance within stroke systems of care
Paul Coverdell National Acute Stroke Registry (PCNASR) History and Timeline

2001 – Congress charged CDC with implementing State-based registries that measure and track acute stroke care – project named Paul Coverdell National Acute Stroke Registry

2004 – CDC funded Georgia, Illinois, Massachusetts and N. Carolina (3 yrs.)

2007 – expanded to Georgia, Illinois, Massachusetts, Michigan, Minnesota, Ohio and N. Carolina (5 yrs.)

2012 – Expansion of PCNASR - Arkansas, New York, California, Iowa and Wisconsin came on board
Coverdell-CDC Funded States

- Arkansas
- California
- Georgia
- Iowa
- Massachusetts
- Michigan
- Minnesota
- New York
- North Carolina
- Ohio
- Wisconsin
CDC Coverdell funding for NYS
Overall Goals of the NYS Coverdell Program

• Strengthen and expand an existing statewide QI program for acute stroke, the NYS Stroke Designation Program
• Meet CDC performance standards related to data collection and reporting, data quality assurance, partnership development and evaluation
• Develop, implement and evaluate a focused QI initiative to achieve at least a 10% improvement in selected indicators of in-hospital stroke care;
Selected Focus Measures

**Time Target**

**Door to IV rt-PA within 60 minutes** Percent of ischemic stroke patients receiving IV t-PA at the hospital who are treated within 60 minutes after triage (ED arrival)(Goal: < 60 minutes); As part of the stroke designation program facilities are required to identify and submit plans of correction to the NYSDOH for instances when the time from Door to IV rt-PA exceeds 90 minutes (details about the requirement are included in the annual review tool)

**Performance Measures**

**IV rt-PA Arrive by 2 Hour, Treat by 3 Hour:** Percent of acute ischemic stroke patients who arrive at the hospital within 120 minutes (2 hours) of time last known well and for whom IV t-PA was initiated at this hospital within 180 minutes (3 hours) of time last known well

**LDL 100 or ND-Statin (at Discharge):** Percent of Ischemic stroke or TIA patients with LDL > 100, or LDL not measured, or on cholesterol-reducer prior to admission, evidence of atherosclerosis, who are discharged on Statin Medication

**Dysphagia Screening:** Percent of patients with ischemic, or hemorrhagic stroke who undergo screening for dysphagia with an evidenced-based bedside testing protocol approved by the hospital before being given any food, fluids, or medication by mouth

**Stroke Education:** Percent of patients with ischemic, TIA, or hemorrhagic stroke or their caregivers who were given education and/or educational materials during the hospital stay addressing ALL of the following: personal risk factors for stroke, warning signs for stroke, activation of emergency medical system, need for follow-up after discharge, and medications prescribed
Choosing the Focus Measures

- Determined by stroke physician workgroup during a meeting on March 12th, 2013.

- Selection was based on review of data on distribution of performance across stroke centers and guiding questions.

- Measures will be the focus of QI and data quality assurance activities
Guiding Questions (Sample)

1. Which measures (performance and time target) represent the most significant opportunity for improvement?

2. Which measures are associated with known or tested improvement strategies for improving stroke care?

3. Which measures reflect aspects of care that should have the greatest impact on stroke outcomes (preventable complications, readmissions, disability, mortality)?
Learning Collaborative

• Ongoing engagement with Coverdell Hospitals

• 4 learning sessions via webinar – hosted by hospital associations (HANYS and GNYHA) - Presentations from coordinators and physicians around NYS (members of Stroke Physician Workgroup and Cardiac Advisory Committee)
  
  • **Session I** - Where did the time go?; Factors contribution to delays in TIA/Stroke recognition – *October 2013*
  
  • **Session II** – Increase in use of IV tPA for patients with low NIHSS scores or rapidly improving stroke symptoms – *January 2014*
  
  • **Session III** – Role of Statin therapy in secondary prevention post brain attack; Dysphagia screen in the acute care of the stroke patient – *March 2014*
  
  • **Session IV** – Community Stroke education to improve content and help retention of material for patients and caregivers – *May 15, 2014*

• Bi-weekly conference calls with Quality Improvement Consultant and Coverdell Stroke Coordinators

• Monthly Tracking Report
## Coverdell Participating Hospitals

1. Albany Medical Center  
2. Albany Memorial  
3. Buffalo General Medical Center (Gates Vascular Institute)  
4. Beth Israel Hospital - Petrie division  
5. Bronx Lebanon Hospital Center-Concourse Division  
6. Brookhaven Memorial Hospital Medical Center  
7. The Brooklyn Hospital Center  
8. Ellis Hospital  
10. Franklin Hospital (NSLIJ Health Systems)  
11. Geneva General Hospital  
12. Jamaica Hospital Medical Center  
13. Highland Hospital  
14. John T. Mather Memorial Hospital  
15. Lawrence Hospital Center  
16. Lutheran Medical Center  
17. Maimonides Medical Center  
18. Medina Memorial Hospital  
19. Mercy Hospital  
20. Mercy Medical Center  
21. Metropolitan Hospital*  
22. Mount St. Mary's Hospital and Health Center  
23. Newark- Wayne Hospital*  
24. North Shore University Hospital  
25. Northern Westchester Hospital  
26. NYU Hospital Center  
27. Plainview Hospital  
28. Rochester General  
29. Rochester Strong Memorial  
30. Saint Francis Hospital  
31. Samaritan Hospital  
32. Saint Barnabas Hospital*  
33. Saint Catherine of Siena Hospital  
34. Saint Joseph Hospital  
35. Saint Mary’s Hospital*  
36. Sisters of Charity Hospital  
37. Southampton Hospital  
38. Saint Peter's Hospital  
39. Stony Brook University Medical Center  
40. Syosset Hospital  
41. Vassar Brother’s Hospital*  
42. Westchester Medical Center*  
43. Winthrop University Hospital  
44. White Plains Hospital  
45. Wyckoff Hospital*  

* 7 NEW!
Stroke in Post Hospital Discharge Settings
Transitions of Care: Points to Consider

• Discharge Planning
• Hospital ↔ Nursing Home Communication
• Post - Stroke Care
• Staff/Patient/Family education
• Prevention of secondary stroke
  • AHA/ASA Guidelines
Communication exchange

- mRS on discharge
- Medication
- Changes to baseline characteristics
- Required rehab

-Baseline characteristics pre stroke; (level of mobility, cognition)
- Last known well
- Time of discovery
- Medication

Hospital

Nursing homes/ Home Care
Discharge Planning

- Patient focused – individualized discharge plan for patient’s level of care needs
- Medically necessary care – varies by stroke severity
- Active rehab
- Education for patient and family – secondary stroke prevention
- Education for Nursing Home staff – signs and symptoms of stroke, dial 911
- Improve long term stroke outcomes
Complications after stroke

• Pressure sores
• Falls
• Aspiration pneumonia
• Catheter associated urinary tract infections
• Venous Thromboembolic Events (VTEs)
• Adverse drug events from Warfarin and anticoagulants
Modified Rankin Scale — performed at discharge

1. No symptoms at all
2. No significant disability despite symptoms; able to carry out all usual duties and activities
3. Slight disability; unable to carry out all previous activities, but able to look after own affairs without assistance
4. Moderate disability; requiring some help, but able to walk without assistance
5. Moderately severe disability; unable to walk without assistance and unable to attend to own bodily needs without assistance
6. Severe disability; bedridden, incontinent and requiring constant nursing care and attention
7. Dead
TIA and Stroke as Predictors of Secondary Stroke

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<tr>
<td>30 days</td>
<td>4 – 8%</td>
<td>3 – 10%</td>
</tr>
<tr>
<td>1 yr</td>
<td>12 – 13%</td>
<td>10 – 14%</td>
</tr>
<tr>
<td>5 yr</td>
<td>24 – 30%</td>
<td>25 – 40%</td>
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New AHA/ASA Stroke Secondary Prevention Guidelines

• Screening stroke and transient ischemic attack (TIA) survivors for diabetes and obesity,
• Possible screening for sleep apnea,
• Possible nutritional assessment and advice to follow a Mediterranean-type diet,
• Long-term monitoring for atrial fibrillation (AF) for those who had a stroke of unknown cause,
• Use of the new oral anticoagulants in specific situations, and
• Awareness of the role of aortic arch atherosclerosis and pre-diabetes as causes of stroke

Published online, May 1 in Stroke, the new guidelines emphasize the importance of blood pressure, cholesterol, weight, and exercise but also include some important new recommendations
Communication exchange

Hospital

- mRS on discharge
- Medication
- Changes to baseline characteristics
- Required rehab

Nursing homes/ Home Care

- Baseline characteristics pre stroke; (level of mobility, cognition)
- Last known well
- Time of discovery
- Medication
Questions???

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Thank you!