

## Stroke Center Certification: Implications for Emergency Medicine

Andy Jagoda, MD, FACEP

Professor & Residency Director  
Department of Emergency Medicine  
Mount Sinai School of Medicine  
New York, New York



## Overview

- What are stroke centers?
- Who is designating them and why?
- What role does EM have in the process?
- What took place at SAEM?
- Where do we go from here?

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## What are Stroke Centers and Why do we Need Them

- National Institute of Neurological Disorders and Stroke (NINDS), 1996
  - Multidisciplinary group, 50 organizations
- “Hospitals must develop comprehensive acute stroke plans that define the specialized roles of nursing staff, diagnostic units, stroke teams, and other treatment services . . .”.

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## What are Stroke Centers and Why do we Need Them

- Narrow therapeutic window
  - t-PA within three hours of symptom onset
  - Rapid identification, transport, diagnosis and treatment
  - Stroke “chain of survival” (AHA)

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## Trauma Center Model

- Military experience with rapid evacuation
- 1966: Accidental Death and Disability: The neglected disease of modern society
  - National Academy of Sciences document
  - Strong government leadership proposed
  - Called for improved training, education, and research
  - Role of prehospital care emphasized
    - Radiocommunication
    - EMS training
  - Categorize hospital capabilities: 4 categories
  - Resulted in the National Highway Safety Act

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## Trauma Center Model

- 1993 report: 20 states had trauma systems with legal authority
  - 5 States had full implementation: many states failed to enforce limitations on the number of centers based on need (due to political obstacles)
- Financial Crisis: decreased federal support, managed care, DRGs, staff retention
- Trauma center implementation has provided an infrastructure for the provision of emergency care

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## Stroke Centers

- Improves outcomes
  - Optimizes chance of recovery
  - Minimizes complications
  - Decreases length of hospital stay
- Provides ongoing monitoring
  - Neurologic deterioration (4-8% seizure)
  - Cardiac dysrhythmias (Cardiac etiology in 14% of post stroke deaths)
  - Decreases incidence of PE, pneumonia (30% of stroke deaths)
- Facilitates diagnostic work-up
- Ensures early rehabilitation, patient and family education

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## 11 Elements of an Acute Stroke Center

Alberts et al. JAMA 2000

- Acute stroke team available 24 hours a day
- Written care protocols to ensure rapid recognition, diagnosis, and treatment
- Emergency medical services integrated into the acute stroke team operations
- Emergency department integrated into the acute stroke team
- Stroke unit
- Neurosurgical services available within 2 hours
- Commitment from the institution
- Neuroimaging performed and interpreted within 45 minutes of patient arrival
- Laboratory services with rapid turn around of tests
- Quality improvement program including a database or registry
- Continuing education program

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## Acute Stroke Team

- One physician & one health care provider
  - Familiar with thrombolytic protocol and able to manage potential complications
- Response within 15 minute/available 24 hrs
- Systems in place including:
  - Communication with EMS prior to arrival
  - Neuroimaging within 25 minutes of ordering
    - Interpretation within 20 minutes of completion

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## Written Care Protocols

- Thrombolytic use is effective when guidelines are followed
- Less than 10% of acute stroke patients are being treated
- Failure to adhere to protocol increases morbidity

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## Emergency Medical Services (EMS)

- Dispatch to Door Time
  - Little training, variable knowledge (Nassisi '00)
- Early identification
  - Cincinnati Stroke Scale (Kohtari)
  - LASS
- Rapid Transportation
  - Lights and Sirens?
- ED Notification

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## Emergency Department Response

- Door to Neuroimaging Time
  - EP's are ideal coordinators of acute stroke response
- Expeditious triage and registration
- Lab -turn around ....45 minutes

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### Other Services

- **Continuous Quality Improvement (CQI)**
  - Track: timing, short and long term outcomes
  - Reduce delays and enhance patient care
    - Tilley et al *Arch Neurol* 1997
    - Newell, *Stroke* 1998
- **Education Programs should be established**
  - Community
  - Health care providers

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### Guidelines for Comprehensive Stroke Centers

- Spearheaded by Dr. Mark Alberts
- Surveyed 160 national stroke leaders: stroke program directors, vascular neurosurgeons, and ED physicians with stroke interest
- Components of survey include: personnel, techniques, infrastructure, programs and expertise

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### Who is Designating Stroke Centers?

- American Stroke Association
- Joint Commission

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### ASA GWTG Measures

Focus is quality of care

- **Acute Stroke Treatment:**
  - Time of symptom onset
  - Time from EMS receiving call to EMS arrival
  - Time patient arrived at Emergency Department (ED)
  - Time of CT/MRI Scan
  - Time of thrombolytic therapy
- **Ischemic Stroke Prevention:**
  - Smoking Cessation Counseling
  - Lipid Lowering Therapy
  - Blood Pressure Treatment
  - Weight and Exercise Management
  - Diabetes Management
  - Atrial Fibrillation Management

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### JCAHO Disease Specific Care Certification

- Joint initiative between ASA and JCAHO
- Voluntary participation
  - 17 accredited hospitals
  - Over 1000 applications
- Premise is that accreditation process will drive quality measures and improve outcomes
- No emergency medicine society has endorsed this initiative
  - t-PA controversy
  - Overcrowding
  - Medical legal implications

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### JCAHO Accreditation vs. Certification

- **Accreditation**
  - Surveys are organization-based, focused on quality and safe care processes and functions
  - Traditional JCAHO evaluation product
  - 50 years establishing expertise in evaluating health care organizations
- **Certification**
  - Reviews are service-based, focused on quality, safety, and outcomes of improving clinical care
  - Voluntary—not an add-on to accreditation

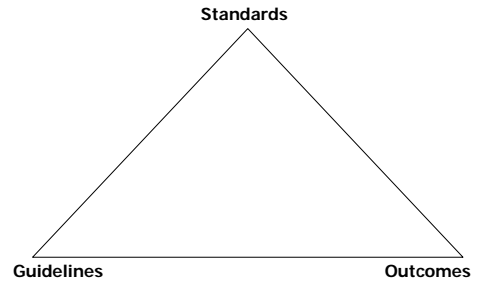
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### Eligibility for Certification

- The disease-specific care service
  - Uses a standardized method of delivering clinical care based on clinical guidelines and/or evidence-based practice
  - Has an organized approach to performance measurement

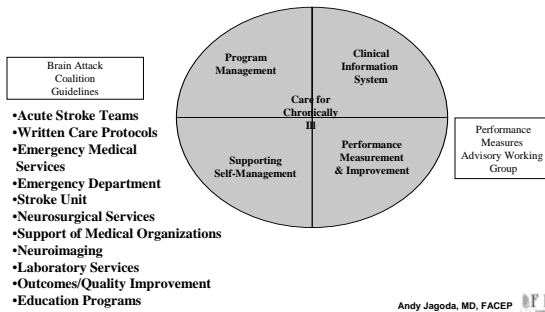
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### Conclusions: Key Learning Points



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### Primary Stroke Center Certification



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### Disease-Specific Care Certification Award Cycle

|                       | Year 1 +<br>Off-site and On-site Evaluation                        | Year 2 =<br>Off-site Intracycle Evaluation   | 2-year award |
|-----------------------|--|--|--------------|
| Scope of review       | Evaluation of standards, clinical practice guidelines and outcomes | Review of updated clinical practice guideline information and demonstrated ongoing improvement in outcomes |              |
| Outcome of Evaluation | Obtain Certificate of Distinction                                  | Maintain Certificate of Distinction  |              |

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### Standards

- Delivering or Facilitating Care
- Performance Measurement
- Supporting Self-Management
- Program Management
- Clinical Information Management

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### The On-Site Evaluation: A Sample Agenda

|                  |  |  |
|------------------|--|--|
| 8:00-8:10 a.m.   | Introductions  |  |
| 8:10-8:30 a.m.   | Overview   | Presentation by service on delivery of clinical care and use of clinical information system(s) |
| 8:30-9:00 a.m.   | Program Management Interview                                   | Review and explanation of implementation of clinical practice guidelines                       |
| 9:00-9:30 a.m.   | Performance Measurement Review                                 | Discussion on how data are used to improve practice and/or care and services                   |
| 9:30-10:00 a.m.  | Observation of participant call/interaction process            |  |
| 10:00-10:30 a.m. | Participant Interviews   |  |
| 10:30-11:30 a.m. | Staff Interviews (individual, small group, telephone to sites) | Direct contact staff, clinical leaders, staff trainer(s)                                       |

**The On-Site Evaluation: A Sample Agenda (cont'd.)**

|                  |   |   |
|------------------|---|---|
| 11:30-12:30 p.m. | Staff Record Review and Human Resources Interview (competence, licensure) | Randomly selected for each classification (RN, MD, other members of the team) |
| 1:00-2:00 p.m.   | Participant Record Review and Information Systems Interview               | Randomly selected; minimum of 5 records                                       |
| 2:00-2:30 p.m.   | Staff Interviews (individual, small group, telephone to sites)            |   |
| 2:30-3:00 p.m.   | Observation of participant call/interaction process                       | This activity can be mock if permission not granted by participants           |
| 3:00-4:00 p.m.   | Report Preparation  | Reviewer prepares report  |
| 4:00-4:30 p.m.   | Closing Conference  |   |


**Why Choose Joint Commission Disease-Specific Care Certification**

- 50 years of recognized and respected excellence and expertise in evaluating clinical care quality
- A Certificate of Distinction will distinguish program and service competencies
- The certification evaluation provides a valued and objective assessment
- Validate your service's internal performance improvement initiatives
- Meet nationally recognized criteria for disease management
- May assist in obtaining contracts from employers and other purchaser groups

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**Certified Primary Stroke Centers**

- Abington Memorial Hospital (*Abington, PA*)
- Froedtert Hospital (*Milwaukee, WI*)
- Good Samaritan Hospital (*San Jose, CA*)
- Hartford Hospital (*Hartford, CT*)
- Lester E. Cox Medical Center (*Springfield, MO*)
- Research Medical Center (*Kansas City, MO*)
- Rochester General Hospital (*Rochester, NY*)
- Sacred Heart Medical Center (*Spokane, WA*)
- Sparks Health System (*Fort Smith, AR*)
- St. John's Health System (*Springfield, MO*)
- St. Joseph Mercy Oakland (*Pontiac, MI*)
- St. Joseph's/Candler (*Savannah, GA*)
- University of California, Irvine Medical Center (*Orange, CA*)


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**The Gold Standard  
 for Health Care Quality**


**What Role does EM have in the Process and the Centers**

- A hospital can not embark on becoming a stroke center without EM participation
- Models exist where EM has taken the lead role in developing the stroke team
  - Conversely, models exist where EM has blocked the initiative

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**What Role does EM have in the Process and the Centers: Concerns**

- Internal and external validity of the NINDS trial
  - > Single trial (two parts)
  - > Treated group not as sick as the placebo group
  - > Hemorrhage rate
  - > Neuroradiology interpretation
- Infrastructure needed to provide timely care
  - > EMS not prepared for their role
  - > Hospitals not prepared for their role
- Medical legal concerns in the emergency medicine and neurology communities
- Reimbursement issues

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### ACEP and Stroke Centers

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- 2000 ACEP ED certification task force report:
  - College should continue to actively support the concept that the emergency physician is trained to manage any patient presenting with an emergency condition
  - Any plan that suggests restricting general ED access based on the patient's clinical characteristics should be evidence based.
  - Such a redistribution must be required to show a benefit to the general public that outweighs the potentially negative impact on the access to and provision of emergency care.

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### ACEP and Stroke Centers

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- October 2003: ACEP Council and Board of Directors unanimously adopted a resolution to monitor the progress of any federal stroke legislation and dedicate resources to make members of Congress aware that:
  - Standards of care in stroke treatment remain controversial
  - The designation of stroke centers based on their ability / willingness to adhere to such standards of care may have many unintended negative consequences

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### ACEP and the BAC

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- Formed in 1997
- A group of professional, voluntary and government groups
- Dedicated to reducing the occurrence, disabilities and death associated with stroke
- Goal is to strengthen the relationship between its member organizations and to provide a forum to discuss mechanisms for improving stroke outcomes

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### BAC Members

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- NINDS
- American Academy of Neurology
- American College of Emergency Physicians
- American Assn of Neurological Surgeons
- American Stroke Association
- National Stroke Association
- Am Soc of Intervent and Therap Neuroradiology
- American Society of Neuroradiology
- Congress of Neurological Surgeons
- Stroke Belt Consortium
- Veterans Administration
- National Association of EMS Physicians
- Centers for Disease Control and Prevention
- American Assn of Neuroscience Nurses

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### SAEM: MAY 18, 2004

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- Background
  - Policy statements: Andy Jagoda
  - American Stroke: Ellen Magnis
- Panel Presentations
  - American Stroke: Mark Alberts
  - ACEP: Brian Hancock
  - SAEM: Jim Adams
  - NAEMSP: Robert O'Connors
  - JACHO: Maureen Connors Potter
- Panel Discussion

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### Where do we go from here?

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- Work with the Brain Attack Coalition
- Educational programs
  - Medical students
  - Residents
- Implementation packets for stroke center certification
  - Pathways, protocols, tools
- Focus on future therapies and having systems in place to facilitate utilization

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## Conclusions

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- The emergency medicine community has not fully endorsed the use of t-PA in acute stroke nor the concept of designated stroke centers
- Significant concerns exist that the JACHO – AHA initiative has not fully assessed the impact of stroke center designation on the health care system as a whole and that benefit to one group of patients may be at the expense of other groups

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## Questions