Stroke Transfers

Downstate Receiving Hospital Perspective

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15 Hospitals – Population served = 7.0 million
• 4 Tertiary
• 8 Community
• Psychiatric
• Children

• 11 System NYS DOH Primary Stroke Centers
• 1 Tertiary Stroke Referral Center
Establishing a Stroke Transfer Network

- Logistics
- Education
- Protocols
Logistics

Establish and Maintain Connections

- System Hospitals
  - System Stroke Task Force
  - Share clinical protocols
  - System quality initiatives
    - Ensure quality stroke care at referring and receiving facilities
  - Establish and maintain primary stroke center certification
    - NYS DOH
    - Joint Commission

- System and Non-system Hospitals
  - Joint education programs
  - TeleStroke
  - Networking with physicians in the community
Logistics

TeleStroke Network

- Virtual presence in referring ED/hospital
- Allows face-to-face interactions between MD’s and with patient
- Enables discussion with patient/family prior to transport
- Increases frequency of IV tPA administration at sending hospitals
- Maximizes appropriate patient transfers
Logistics

Contact
- Simplify communication between referring and receiving hospital
- Single Phone Number
- Transfer or Call Center
- Protocol of who to transfer
- Be consistent
  - Strict criteria vs. Take all comers
- Be efficient
- Eliminate delays and road blocks

Remember the three A’s
- Availability - 24/7/365
- Affability
- Ability
Logistics

Transfer Center
- Stroke Hotline
  - Rapidly connect referring physician to accepting physician
  - Conference physicians with EMS and receiving ED physician
  - Avoid delay because of bed availability
  - Call schedule, so scalable to multi-MD coverage with back-up to ensure contact

Direct MD-MD Contact
- Relies on phone/pager of receiving MD
- Does bypass “the middle man”
- Not easily scalable to more than 1 or 2 MDs
- More likely for error- Phone not charged, on vacation/conference
- Difficult to QA
Logistics

Emergency Medical Services Transport
- Rapid communication line with EMS
- Clinical Care Protocols
- Two tiers of transport
  - Stroke Rescue
    - Acute stroke for possible endovascular intervention
    - Lights and sirens
  - Stroke Transfer
    - Routine stroke transfers and hemorrhages
    - Outside of acute treatment window
- QA program
**EMS Transport Times**

<table>
<thead>
<tr>
<th></th>
<th>Cases</th>
<th>Transport 1 Time (Avg Min)</th>
<th>OSH ED Time (Avg Min)</th>
<th>Transport 2 Time (Avg Min)</th>
<th>Call to Door Time (Avg Min)</th>
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- Transport 1 = From phone call to arrival at sending facility
- OSH ED Time = Arrival at sending to leaving sending
- Transport 2 = From sending to receiving facility
- Call to Door Time = Goal is less than 60 minutes
Education

- Referring Physicians
  - Neurologists
  - Emergency Medicine
  - Internists/Intensivists

- Hospital Staff – At sending and receiving hospitals
  - NP/PA’s
  - RNs

- EMS
Educational Activities

- **Provide CME to the network**
  - All stroke team members need 4 annual stroke CME

- **Annual Stroke Update: At Receiving Hospital**
  - Update on latest treatments, imaging, management and protocol changes
  - Builds relationships and sense of co-ownership of program
  - Co-sponsored by Neuroscience and Emergency Medicine

- **Stroke Roundtable Case Conferences: At Sending Hospitals**
  - Bring interesting stroke cases to the referring hospitals
  - Reinforce paradigms of acute stroke care
  - Provide outcome and feedback of past transfers
  - Strengthens bond between referring and receiving clinicians and institutions
Education

EMS Lectures and Case Conferences
- Educate paramedics and EMTs
- Review protocols for monitoring and management of patients during transport
- Provide clinical updates on stroke management
- Teach neurological assessments and anatomic localization
- Give feedback on past transfers
- Opportunity to get feedback from EMS to improve processes, safety and transfer efficiency
Protocols

- Shared between all hospitals in referral network

Clinical Guidelines
- Endovascular therapy
- IV tPA
- Management of acute stroke patient waiting for transport

Transfer Protocols
- Stroke Rescue
- Stroke Transfer
- Activation of stroke and endovascular teams once patient arrives at the receiving hospital

EMS Protocols
- Management of stroke patient during transport
- Drip and Ship Protocol
Protocols

Decisions

- Accept all patients or screen and selective
- Transfer to ED, ICU or endovascular suite/cath lab
- Allow in-house patients at sending facility to be transferred to receiving ED for acute stroke care

Hospital administration, Neurosciences, Emergency Department, ICU
Protocols

What we need to know
- Time of onset or last known normal
- Head CT done
- Airway and vital sign stability
- IV tPA dose and infusion start time
- Other drips

What we would like to know
- Blood pressure
- Neurological exam/ NIH Stroke Scale
- Baseline functional status prior to stroke
- Family contact numbers for consent

What we ask
- Send films/CD
- Promote realistic expectations with patient and family
Summary

Keep it Simple

easy

Available Now