An Overview of Telestroke Models: What's Right For Your Hospital

Lori Massaro, MSN, CRNP and Kathy Morrison, MSN, RN, CNRN, SCRN

Disclosures

• Lori M. Massaro, MSN, CRNP – Speakers’ Bureau – Genentech, Inc
• Kathy Morrison, MSN, RN, CNRN, SCRN - none
Objective

- Learners will be able to describe models of care delivery that are available in telestroke.

UPMC Stroke Institute

- Telestroke network in place since 2006
  - Currently 21 hospitals are participating in network – Western PA and Western MD
  - 2014 stats
    - 465 telestroke consults
    - 199 patients treated with IV tpa
    - 141 patients transferred after telestroke consult
Penn State Hershey Stroke Center

• Telestroke network in place since July 2012
  • Currently 13 hospitals participating – central PA
  • 2014 stats (12 partners)
    • 1141 telestroke consults
    • 119 treated with IV tPA (25% of ischemic cases)
    • 182 transferred after telestroke consult (16%)
    • 54% with stroke diagnosis / 46% other

What is telestroke?

• The deliver of expert neurology care via remote videoconferencing to patients who may have suffered a stroke
  • The fastest growing trends in stroke care
  • One of the most widely adopted uses of telemedicine

Models of Telestroke delivery

• Third party consult – neurologist is located anywhere in the world and are on call with a contracting hospital
  • Spoke will still need partnership with a hub hospital for complex stroke care

• Hub and Spoke – smaller regional hospitals connect with a larger regional stroke center under formal agreements to provide stroke care
  • Some models include neurosurgery consultation
Picture of the Interactive Process

Portable Options for Prehospital
Portable Monitors Now Available

Practical Considerations

• Contracts between the Hub and Spoke hospital
  • Can be tedious and take time

• Licensing – practitioners must be licensed in the state to practice
  • consider cost/physician and time factor to be granted licensure

• Credentialing -
  • Full for patient care
  • Proxy credentialing - CMS and TJC standards revised in 2011
    • Allows Medicare participating hospitals (spoke) to confer privileges to telemed provider by relying on credentialing process at the facility (Hub) providing the telemed services
  • Must consider time and costs
Practical Considerations

- Choosing the equipment
  - At both Spoke and Hub
  - Portability
  - Consider Purchasing and delivery delays

- Establishing connectivity
  - Hospital/system Firewalls
  - Internet speed
  - Will definitely need an IT contact at both sites to work in parallel with system/clinical preparations

Practical Considerations

- Documentation - What occurred during the telestroke encounter
  - Recommendations for treatment
  - IV tpa – yes or no – rationale if not treated
  - Recommendations for care –
    - Transfer or keep
    - Additional imaging
  - Dictated or typed into originating hospital electronic medical record
  - Who retains copies
  - Record keeping of consults
Practical Considerations

- Feedback – should flow both ways Hub → Spoke; Spoke → Hub
  - Opportunities for improvement
  - Success stories
  - Connectivity issues

- Outcome metrics –
  - Need to create a database to keep track of consults/interactions
    - Paper v electronic
  - Track complications – symptomatic ICH after tpa
  - Method to obtain 90 day Modified rankin scores for patients who were treated with IV tpa
  - Volume/type of patients who are transported

Practical Considerations

- Reimbursement – currently unable to bill for this encounter
  - Reimbursement for on-call vascular neurologists
  - Financial support for program requirements/setup/education by Hub system coordinator

- Looking at return on investment
  - Transfer or keep?
  - Patients who can stay at spoke hospital – TIA/stroke mimic/pts not eligible for treatment
  - Return patients back to spoke hospital for rehab
  - Downstream revenue for hub – other procedures, therapies, follow-up appts
  - Improved outcomes for patient – reducing the burden of stroke
Quality Metrics to Consider

• Time to connection - notification by spoke to video connect
• Delays – type, frequency, by MD??
• D2N for telestroke consults vs non- telestroke consults
• Transport time from spoke to hub
• Complications post tpa
  • Symp ICH
• 90 day MRS for treated pts
• Volume and type of patients transferred
• Outcomes/discharge disposition of pts who are not assessed via telemed
• Reimbursement gap for drip & ships – hub hospital

Sustaining the Network

• Maintaining relationships - Hub and spoke
  • Frequent communication - monthly calls to review data and provide feedback
  • Usually coordinator ↔ coordinator
• Education – Hub should schedule/offer educational sessions to spoke site staff
  • Clinical practice updates
  • Case reviews – the good/the bad/the ugly – we all learn from these
  • Research findings
• Site visits – quarterly is effective
  • To review data; specific case reviews
  • Allow for increased dialogue
  • Provider and nurse from hub is ideal
Developing Clinical Expertise

Improving Nursing Practice Through Telestroke Partnerships

Funding Opportunities

• Grants
  • Federal – USDA, CMS, HRSA, National Library of Medicine
  • State - Safety grants, Wellness grants
  • Research – NIH, CMS

• IT Grants
  • Private
  • Technology based – Verizon, Microsoft,

• Foundation
  • Private
  • Philanthropists
Regulatory Requirements

Keeping Up With Changing Trends

- Technology
  - Computers → tablets → smartphones
  - Carts vs remote tele-presence
  - Contracted vendors vs homegrown
- Provider Resources
  - Advanced Practice Clinicians
  - Contracted, remote consultants
- Regional Competition
- Regulatory Considerations
  - TJC, CMS, state-specific rules, EMS resources
- Payer Patterns/Requirements
  - Telemedicine consultation
  - Follow-up? Via telemedicine/email/phone
Summary

• Improve access to stroke care
  • Real-time access to specialty consultation
• Improve comfort level and knowledge of staff at spoke sites
  • ED and inpatient staff – nurses and hospitalists
• Improve IV tpa treatment rates
• Allows for screening of patients who may benefit from a higher level of care or enrollment in a clinical trial

Telestroke Relationships Benefit Everyone

• Sharing of best practices
• Exchange of information
• Reduces unnecessary travel/transfer
• Avoid by-pass phenomenon
• Potential for increased HCAHPS scores

Thank you

massaroll@upmc.edu
kmorrison1@hmc.psu.edu