Decreasing Door to Needle Times and Increasing Stroke Recognition through a Virtual Stroke Program

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Financial Disclosure:
No relevant financial relationship exists
Objectives

• Use of specialized stroke care nurses to facilitate management of patients during code stroke.
• Define the use of standardized workflow development and education.
• Explain importance of weekly interdisciplinary debriefings to discuss workflow process improvement.
• Understand that a defined workflow will give the ability for early recognition and decreased door to needle times for thrombolytic therapy.
Virtual Stroke Program Process
Why Telestroke?

- Enhance System Stroke Network to deliver expert care to a wider geography
- Worsening neurologist shortage (~20% shortfall by 2025) coupled with cost constrained environment, driving increasingly efficient staffing models
- Demand for stroke services growing significantly: tPA and endovascular interventions to increase by 206% and 136%, respectively, between ‘13 – ’23 - Supported by recent publications
- Virtual stroke networks proving to increase access to therapy, improve quality/ outcomes and reduce cost of care

To accomplish this, the Neurosciences Institute (NI) leadership realized the importance of moving from a telephonic model to a virtual care solution
Mission and Purpose

To improve health, elevate hope

And advance healing for all.
NSI Telestroke Network

**Volume Measures - 2017:**

- # Spoke facilities supported: 22
- Planned additions in 2018: 4
- # Telestroke encounters: 1,967
- # tPA administration: 245
- # cases transferred for IA: 58
- % Transfer rate (excl. FSED): 11.6%
• Telestroke RN is available at the initiation of all code strokes
  • Guide processes and care for the stroke patient,
  • Assist in recognition of ischemic stroke
  • Guide potential LVO transfers
  • Support bedside with tPA administration and monitoring.
• Telestroke RN is the conduit between the bedside facility and the Teleneurologist
• Telestroke RN is responsible for data entry for all sites covered
• Telestroke RNs work closely with the bedside to improve overall collaboration of care
Developing Standard Processes
Standard Workflow

• New facility flowmapping
  • Look at existing code stroke process
  • Identify potential barriers to implementing Telestroke
  • Flow out new process including Telestroke process
  • Run mock evaluations
  • Go-Live
Facility Flowmap

Patient presents with stroke-like symptoms either by EMS or POVD < 6 hrs of symptoms onset

Registration completes quick reg

Triage: triage RN triages pt in room for triage LKW within 6 hrs, SAS

Internal notification: “Stroke alert rm XX” page overhead

Teammate places cart in room and notifies MD of possible code stroke

MD examines pt, determines if it is a code stroke, advises RN to call Code Stroke

RN hits the green alert button on side of the tel strokel: “Connect to the VCC RN providing LKW

ER MD places order for Adult Neuro Code Stroke Assessment powerplan

Primary RN obtains Labs (handed over to labtech), LV (at least 1 RAC), associates monitor and takes pt to CT on portable monitor

VCC RN starts encounter and gathers info, stays on call for support

Neurologist calls ER MD to discuss case

Neurologist connects to cart and completes NIHSS with Primary RN assisting

Neurologist places order for tPA in FirstNet

Primary RN verifies dose with other RN (can be VCC RN) and administers tPA bolus and drip

Neurologist contacts ER MD with final disposition, if admitted to NE, Neurologist will place order for bed in Center

ER NE/RN places PCL request for transport/transfer if admitted to NE

ER MD will connect back with Neurologist to transfer pt if no beds available in NICU

ER MD to utilize normal admission/transfer procedure for NON-NE admits

Pt departs ED

VCC RN stays for the duration of tPA administration and for until patient is admitted to a CC bed or transferred to accepting facility

Must Have Actual Weight!!!

Triage or Primary RN enters following data into the Code Stroke VIEW: and:
- Time Code Stroke Called
- Last known well
- Date/Time of Unknown
- Source of Stroke information
- Data/Time Provider at bedside
Interdisciplinary Debriefings and Quality Meetings
Weekly data debriefing

- Data is sent out weekly by the Telestroke program Manager & Coordinator after reconciliation.
- Each site is responsible for reviewing their data and being able to speak to fall-out metrics.
- All sites connect to a weekly call to discuss and review metrics, provide updates as necessary and network.
- Stakeholders include:
  - Stroke coordinators
  - Physician champions
  - Telestroke nurses
  - Facility managers
  - Facility bedside stroke champions
  - Data analysts
Quarterly and Bi-quarterly calls

- Based on volume
- Discuss overall roll-up data for previous quarter(s)
- Look at trends for quality improvement focus areas
- Discuss changes in protocol, guidelines, etc
- Perfect time to include facility administration to help overcome barriers to success

Stakeholders:
- Administrators
- Physician champions
- Stroke network medical director
- Stroke coordinators
- Facility managers
- Stroke champions
Showing Value Through Metrics
Early recognition

- Overall improved recognition of patients exhibiting signs of stroke as evidence by early activation, improved door to physician times and physician to activation times.
Improved Door to Needle times

- Total code stroke volume has increased since 2015, tripling from 2015-2017
- tPA administration volumes have also increased, doubling from 2015-2017
- Door to needle times have decreased 24% from 2015 going from 82 mins to 62 mins
Summary

- Development of a Virtual Stroke program has shown to decrease Door to Needle times by the use of specialized stroke nurses who are driving the care and management of all code stroke patients in both rural and metro facilities. By use of the virtual stroke program Neurology services are leveraged across a vast region, allowing for early detection and treatment for disabling neurological deficits. Planning, development, and implementation of standardized stroke workflows has shown to positively impact door to needle times. Education on standardized care as well as weekly interdisciplinary debriefings has allowed for early recognition, process improvement and sustainment of defined metrics.
Questions?
Thank you

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