North Dakota State Stroke Designation Program & Brain Attack Coalition Guidelines

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ND Levels of Stroke Designation

- Comprehensive Stroke Center
  - Joint Commission
    - Currently None in ND
- Primary Stroke Center
  - Joint Commission
    - 6 Tertiary Hospitals
- Acute Stroke Ready Hospital Designation
  - State Designation
    - 30 Critical Access Hospitals
Primary Stroke Center

- Bismarck
  - CHI St. Alexius Health
  - Sanford Health
- Fargo
  - Essentia Health
  - Sanford Health
- Grand Forks
  - Altru Health
- Minot
  - Trinity Health
Acute Stroke Ready Hospital

- Garrison Memorial Hospital
- Unity Medical Center
- St. Andrew's Health Center
- Towner County Medical Center
- CHI St. Alexius Dickinson
- Presentation Medical Center
- CHI Community Memorial
- CHI St. Alexius Devils Lake
- Pembina County Memorial
- CHI Carrington Health
- Ashley Medical Center
- Jacobson Memorial Hospital
- CHI Oakes Hospital
- Mountrail Medical Center
- Tioga Medical Center
- Mercy Hospital

- McKenzie County Healthcare
- Wishek Hospital Clinic Association
- SouthWest Healthcare Services
- CHI Lisbon Health
- First Care Health Center
- Cavalier County Memorial
- Sakakawea Medical Center
- Jamestown Regional Medical
- Heart of America Medical Center
- St. Aloisius Medical Center
- West River Health Services
- Linton Hospital
- Sanford Mayville Medical Center
- Mercy Medical Center
Brain Attack Coalition

- Group of professional, voluntary, & government organizations
- Set direction, advance knowledge, and communicate best practices to prevent & treat stroke
- Created recommendations
  - Comprehensive Stroke Centers
  - Primary Stroke Centers
  - Acute Stroke Ready Hospitals
Brain Attack Coalition Members

- National Institute of Neurological Disorders and Stroke
- American Academy of Neurology
- American Association of Neurological Surgeons
- American Association of Neuroscience Nurses
- American College of Emergency Physicians
- American Society of Neuroradiology
- American Stroke Association, a Division of American Heart Association
- Centers for Disease Control and Prevention
- Congress of Neurological Surgeons
- National Association of EMS Physicians
- National Association of State EMS Officials
- National Stroke Association
- Neurocritical Care Society
- Society of NeuroInterventional Surgery
- Stroke Belt Consortium
- U.S. Department of Veterans Affairs
North Dakota Acute Stroke Ready Hospital Designation

- State designation
- Based on 2013 Recommendations from the Brain Attack Coalition
- Is NOT Joint Commission/ AHA/ASA Acute Stroke Ready designation
  - Hospital will need to go through separate designation process if they desire
  - Designation also based on Brain Attack Coalition guidelines
Why designation??

- You are often the first stop for patients
- Time is brain!
  - Geography
- Goal through meeting criteria:
  - Better outcomes
  - Improved care
- Need to distinguish those that are able to provide definitive care to stroke patients
Acute Stroke Ready Hospital

- Initial diagnostic services
- Stabilization of acute stroke patient
- Emergent care & therapies to acute stroke patient
- Arrange for transfer to a Primary or Comprehensive Stroke Center
- Drip & ship
Acute Stroke Team

- 15 minute response time
- Minimum nurse & provider
  - Telemedicine may substitute as provider
- ND requires 2 hours annual stroke education
  - TJC requires 4 hours
  - Emphasis on acute stroke care, diagnosis, treatment
- Stroke log
  - Response times
  - Diagnosis
  - Treatment/complications
  - Disposition
Stroke Protocols

- State Stroke Protocol
- Standardized order sets
  - Ischemic Stroke
  - Hemorrhagic Stroke
  - Blood Pressure Management
- Can be paper or computer based
  - BAC prefers computer based as it reduces errors and can be easily modified
- Annual review and revision
Emergency Medical Services

- Studies show those that dial 9-1-1 are likely to be more rapidly diagnosed and treated
- Training in field assessment tools for stroke
- Cincinnati Stroke Scale
  - ND EMS Association offered education to all ambulance services
- ND EMS services required to submit stroke transport plan as part of licensure process
- Feedback
  - Relationship between the ASRH & EMS is critical
Emergency Department

- Written protocols for treatment & stabilization of stroke patient
- Detailed instructions for the administration of IV tissue plasminogen activator (tPA) for ischemic stroke
- Reversal of anticoagulation for patients with intracranial hemorrhage
- Trained in the use of National Institutes of Health Stroke Scale (NIHSS) recommended
- Consider mock stroke codes
- Accurate weight
Lab/ EKG

• Test results should be available within 45 minutes of ordering
• Essential due to:
  ▫ Diagnosis of infectious & metabolic disorders that can masquerade as stroke syndrome
  ▫ Treat patients with proper medication
  ▫ Determine possible causes of some types of stroke
Brain Imaging

- Head CT performed and read within 45 minutes of patient arrival to ER
  - Train other staff to turn on CT if needed to save time
- Directly to CT if patient stable
  - Provider eyes on patient
- Track CT read times
- Provide feedback to reading service if delays
  - Incorrect ordering
  - Regardless of who is interpreting results should be communicated to physician in the timeframe goals
IV Tissue Plasminogen Activator (tPA)

- Goal: Door to needle time < 60 minutes
- Train nurses to mix
- Document
  - Risks & Benefits explained if administering
  - Contraindications if not administered to stroke patient
- Know the return policy
- Backup bottle or plan to restock
• Differentiate from (TnKase)
  ▫ Ziploc bags
  ▫ Pencil boxes
  ▫ Images
Telemedicine

- Available within 20 minutes of when it is deemed medically necessary
- May aid treating clinicians and guide therapy if the bedside expertise of the available healthcare providers is in need of extension
Transfer to PSC or CSC

- Goal: Within 2 hours of ED arrival or once medically stable.
- Agreements with 1 or more PSC or CSC
- Drip & ship approach
- Communication with accepting facility
  - One-call
- Neurosurgical services available
  - Within 3 hours deemed medically necessary
Administrative Support & Leadership

- ED Staffing
- Infrastructure improvements
- Teletechnologies
- Partnering with other facilities in transferring patients
- Educational programs for staff
- Administrative interest in stroke program effort
- Medical director
Quality Improvement

- Performance metrics
- State Stroke Registry
- Track stroke code times
  - Several elements have specific time goals
- Share feedback at quarterly meetings
- Feedback to EMS
# Stroke Code Feedback Form
**Revised 1/15**

## Date

<table>
<thead>
<tr>
<th>Pt. Initials/MRN</th>
<th>Age/Gender</th>
<th>Mode of Arrival</th>
</tr>
</thead>
</table>

## EMS SERVICE:

<table>
<thead>
<tr>
<th>Team members</th>
<th>LKW documented</th>
<th>BG drawn/documented</th>
<th>Stroke code documented</th>
<th>Scene Time</th>
<th>EMS contact/arrival at Altru</th>
</tr>
</thead>
</table>

## STROKE Code Components

<table>
<thead>
<tr>
<th>Physician</th>
<th>Nurse</th>
<th>Phlebotomist</th>
<th>CT/Radiology</th>
<th>Pharmacy</th>
<th>Neurologist</th>
<th>HUC</th>
<th>Stroke orders used?</th>
<th>“LKW” documented</th>
<th>Weight documented</th>
<th>NIH completed</th>
<th>Dysphagia Screening complete</th>
<th>Telespecialist Called</th>
<th>Telespecialist Arrived</th>
<th>Door to lab draw time</th>
</tr>
</thead>
</table>

## Door to MD Assessment

<table>
<thead>
<tr>
<th>Door to CT Scan</th>
<th>Door to Stroke Code Called</th>
<th>Door to CT Interpretation</th>
<th>Door to EKG</th>
<th>Door to Lab Results</th>
<th>Door to alteplase Administered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal Time: &lt; 10 mins</td>
<td>Goal Time: &lt; 25 mins</td>
<td>Goal Time: &lt; 10 mins</td>
<td>Goal Time: &lt;45 mins</td>
<td>Goal Time: &lt; 45 mins</td>
<td>Goal Time: &lt; 60 mins</td>
</tr>
</tbody>
</table>

## Patient Scenario:

- **Goal Met**
- **Goal NOT met**
Community Awareness

- NDDoH Materials
- AHA Materials
- Be creative in spreading the message of awareness of F.A.S.T.

Know the signs of stroke and call 9-1-1 for the fastest access to the Stroke System of Care for North Dakota.
Diversion

• If a designated Acute Stroke Ready Hospital is temporarily unable to meet capabilities
  ▫ Contact transporting EMS agencies to inform them
  ▫ Email/call smthorson@nd.gov/ (701)328.4569 to inform State Stroke System
What if my facility isn’t designated?

- Patients may still walk in with stroke symptoms
- Facility should have protocol in place to rapidly identify and transfer stroke patients to a designated stroke facility
- Remember time is brain!
- Community awareness
References

Questions?

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