STROKE
Outline:

• Stroke Program Education intended for:
  • All ED providers
  • All inpatient providers
    • Medical services
    • Surgical services
SCLHS Denver Area Stroke Programs

• Joint Commission Accredited Primary Stroke Centers:
  • Saint Joseph Hospital
  • Lutheran Hospital
  • Good Samaritan Medical Center

• Primary Stroke Center Designation recognizes hospitals that meet standards to support better patient outcomes for stroke care.
Stroke Program Accreditation

• What is the eligibility requirements for Primary Stroke Center Accreditation?
  • Dedicated stroke-focused program
    • staffing by qualified medical professionals
    • individualized care to meet stroke patients’ needs
  • Brain Attack Coalition and American Stroke Association guidelines
    • Coordination of post-discharge care
    • Patient self-care and education
  • Streamlined flow of patient information
  • Collection of the hospital’s stroke-treatment performance data inputted into national database
    • Program assessment and continually
    • improve quality of care for stroke patients
Stroke Territory Symptoms

Anterior Circulation

- FAST
  - Face
  - Arm
  - Speech
  - Time

Posterior Circulation

- 5 “Ds”
  - Dizziness
  - Diplopia
  - Dysarthria
  - Dystaxia
  - Dysphagia
Acute Stroke Causes

Fig. 23-1. Classification of stroke by mechanism with frequency estimates.
Rapid treatment of acute stroke can reduce disability!
Stroke Alerts

- Activate a Stroke Alert for new neurological deficits!
  - Facial weakness, Arm or leg weakness
  - Difficulty speaking or understanding
  - Balance disturbance, vertigo, dizziness
  - Severe, sudden headache without known cause
- Last known normal < 12 hours
  - IV-tPA within 3 hours, up to 4.5 hours in select patients.
  - If outside IV-tPA window may still be eligible for intra-arterial (IA) intervention
- Contraindications for IV-tPA
  - Anticoagulants (INR > 1.7)
  - Non-compressible, active bleeding site.
Some Stroke Mimics

- Alcohol intoxication
- Intracranial infection
- Medication adverse event
- Bell’s Palsy
- Low blood sugar
- Migraines
- Seizures and postictal states
- Tumors
- Dementia
- Multiple sclerosis
Stroke Telemedicine (Telestroke)
Telemedicine - CO-DOC

- Used for emergency department and in-house stroke alert evaluations 24/7.
- **CO-DOC** is a program coordinated by HealthONE and Blue Sky Neurology that allows immediate consults for acute stroke evaluation and assesses the patient remotely using reliable, secure, videoconferencing.
- Real-time evaluation of the patient and allows the neurologist and the physician to work together to treat the patient.
- Neurology consultant can help make decisions regarding best management with IV-tPA and, if needed, intra-arterial thrombectomy, facilitate and coordinate air-transfer to the Comprehensive Stroke Center at Swedish Hospital.
Tissue-type Plasminogen Activator (tPA) for Acute Ischemic Stroke

• Current guidelines are to give t-PA in less than 60 minutes from arrival/onset of alert for inpatients.

• Earlier treatment with t-PA is associated with:
  • reduced mortality
  • less symptomatic intracranial hemorrhage
  • higher rates of independent ambulation at discharge
  • Increased rates of discharge to home.

• The earlier you start tPA the greater the benefit and lower the risk.

• Bleeding Complication rates for SJH, LMC, GSMC are ~ 2.5% (less than the reported rate of 6%)

• For every 1000 patients treated with tPA every 15-minute time reduction was associated with:
  • 18 more patients having improved ambulation at discharge
  • 13 more patients being discharged to a more independent environment
  • 4 fewer patients dying before discharge.
Post tPA Patient Care

• Details are contained in “Stroke Admission post Alteplase Administration” order set

• Important points:
  • Avoidance of significantly elevated BP is of the utmost importance:
    • Treat for BP >180/105.
  • Serial vitals signs and neuro-checks must be performed and documented by nurses.
    • Every 15 minutes during tPA infusion and for 2 hours after completion
    • Every 30 minutes for the next 6 hours
    • Every 60 minutes for the next 16 hours.
    • Then per unit protocol.
  • Patients must stay in ICU for 24 hours.
  • SCDs (pneumatic compression device) should be placed on admission.
  • Pharmacologic VTE prophylaxis and antithrombotic therapy can (and should) be started 24 hours after tPA infusion complete.

• All patients should be seen by neurology.
### Relevant Performance Measures

<table>
<thead>
<tr>
<th>Performance Measures</th>
<th>Ischemic Strokes/TIA</th>
<th>Hemorrhagic Strokes</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hyperacute Performance Measures</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>t-PA administered by 3 hours in patients that arrive by 2 hours</td>
<td>x</td>
<td></td>
<td>&gt;85%</td>
</tr>
<tr>
<td>t-PA administered by 4.5 hours in patients that arrive by 3.5 hours</td>
<td>x</td>
<td></td>
<td>&gt;75%</td>
</tr>
<tr>
<td>t-PA within 60 minutes of arrival</td>
<td>x</td>
<td></td>
<td>&gt;75%</td>
</tr>
<tr>
<td>Dysphagia Screen prior to ANY PO</td>
<td>x</td>
<td>x</td>
<td>&gt;75%</td>
</tr>
<tr>
<td><strong>Acute Performance Measures</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VTE Prophylaxis</td>
<td>x</td>
<td>x</td>
<td>&gt;85%</td>
</tr>
<tr>
<td>Antithrombotic administered by end of hospital day 2</td>
<td>x</td>
<td></td>
<td>&gt;85%</td>
</tr>
<tr>
<td>Initial/admission NIHSS reported</td>
<td>x</td>
<td></td>
<td>&gt;75%</td>
</tr>
<tr>
<td><strong>By Discharge Performance Measures</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discharged on antithrombotic</td>
<td>x</td>
<td></td>
<td>&gt;85%</td>
</tr>
<tr>
<td>A-fib and discharged on anticoag</td>
<td>x</td>
<td></td>
<td>&gt;85%</td>
</tr>
<tr>
<td>Patients with LDL &gt;= 100 are discharged on statin</td>
<td>x</td>
<td></td>
<td>&gt;85%</td>
</tr>
<tr>
<td>LDL Documented during hospitalization</td>
<td>x</td>
<td></td>
<td>&gt;75%</td>
</tr>
<tr>
<td>Patient education performed AND documented</td>
<td>x</td>
<td>x</td>
<td>&gt;85%</td>
</tr>
<tr>
<td>Smoking cessation counseling performed AND documented</td>
<td>x</td>
<td>x</td>
<td>&gt;85%</td>
</tr>
<tr>
<td>Rehab(PT/OT/ST) considered</td>
<td>x</td>
<td>x</td>
<td>&gt;85%</td>
</tr>
</tbody>
</table>
Why Do You/We Care About Performance Measures?

- They are required by The Joint Commission for Primary Stroke Center Certification.

- They are required by CMS. This has an effect on reimbursement which directly effects the quality of the services that support all patient care.

- To follow the American Heart Association for “Get With the Guidelines” recognition and for improvement in patient care.
Relevant Performance Measures (Caveats and Comments)

- Hemorrhagic strokes include:
  - Non-traumatic subarachnoid hemorrhage
  - Intracerebral hemorrhage.

- If a patient is admitted on *any* lipid-lowering drug they must be discharged on a statin.

- If a patient has a outpatient LDL within the last 30 days *document* this in the chart to fulfill the requirement.

- If a performance measure can not be filled (i.e. statin allergy, patient refusal, etc) *document* the reason.
Relevant Performance Measures
(Caveats and Comments)

• Stroke patients presenting within 4.5 hours of time last known normal who do not receive tPA, please document specifically why this decision was made.
  • Stating “patient is not a candidate” without a reason does not fulfill our regulatory requirements.

• Admit patients only to “Stroke Units” as defined by each facility.
  • These nurses have additional education and training to take care of stroke patients.
Info For All Inpatient Providers (Including Surgeons):

- Use stroke order sets for any admission that you think may be a stroke.
  - It has everything that you need to fulfill the performance measures.
  - It is a stand-alone admission set.
  - It is designed to make your life easier, not harder, and to provide the best care possible to patients based on clinical practice guidelines.

- If you use the stroke order sets please leave the default neuro check box checked.
  - The other boxes are pre-checked with appropriate evidence-based stroke management interventions as well.
Info For All Inpatient Providers (Including Surgeons):

- **Available Stroke Admission Order Sets**
  - Stroke / TIA Admission without Alteplase Administration
  - Stroke Admission Post Alteplase Administration
    - Can be used if tPA administration was done at another facility and transferred in.
  - Hemorrhagic Stroke
    - This was designed for intracerebral hemorrhagic stroke patients

- **Available Acute Stroke Evaluation Order Sets**
  - Stroke Acute Evaluation
    - For the acute ED or inpatient evaluation.
      - Not an admission order set.
  - ALTEPLASE Administration-Stroke
    - For the administration of IV t-PA in the acute setting.
    - Post Alteplase Administration order set must be used with the Alteplase Administration order set.
Contact

• Contact the site hospital Stroke Program Coordinator for questions/concerns.

• Saint Joseph Hospital
  • Lalanya Gilmet 303-812-5630

• Good Samaritan Medical Center
  • Mary Seitenbach 303-689-4609

• Lutheran Medical Center
  • Jessica Telesco 303-467-4726
“THE FUNCTION OF THE ENTIRE BODY IS TO CARRY THE BRAIN AROUND.”

Thomas Edison

Thank you for all you do to help the Stroke Centers maintain clinical excellence!