Aspects of Stroke Care

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ASPECT
ARKANSAS STROKE
PROFESSIONALS ENGAGING IN CARE AND TREATMENT
Stroke Inpatient Quality Measures/Joint Commission

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All measures are submitted to Joint Commission. STK-4 is the only measure being submitted to CMS.

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STK-8: Stroke Education
STK-B Stroke Education

Description: Ischemic or hemorrhagic stroke patients or their caregivers who were given educational material during the hospital stay. (Those patients that are transferred to another healthcare facility are excluded from this indicator.)

Educational Bundle:
Documentation:
*All items must be addressed by written instructions/educational material to get credit for compliance with this indicator.
*Items to be addressed:
  1. Activation of emergency system
  2. Need for follow-up after discharge
  3. Medications prescribed at discharge
  4. Risk factors for stroke
  5. Warning signs and symptoms of stroke.

* Documentation must clearly convey that patient/caregiver was given a copy of the written material to take home.

If there is documentation that indicates that the written instruction/material were not given because the patient is cognitively impaired and no caregiver available the abstractor may select Yes to receiving. The caregiver is defined as the patient’s family or any other person who will be responsible for care after discharge (e.g., home health, VNA provider, prison official).

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STK-8

Risk Factor Education

- This must be *individualized*.
- Provide education on the risk factors that are specific to the patient.

- Excluded Populations
  - Patients less than 18 years of age
  - Patients who have a length of stay greater than 120 days
  - Patients with “comfort measures only” documented
  - Patients enrolled in clinical trials
  - Patients admitted for elective carotid intervention
STK-10: Assessed for Rehab
Approximately two-thirds of patients who experience a stroke and survive require rehab. 40% are left with moderate functional impairment, and 15-30% are left with severe disability. Stroke rehab should begin as soon as the diagnosis of stroke is established and life threatening issues are under control. Families need guidance in planning effective and realistic care strategies appropriate to the patient's prognosis and potential for rehabilitation.
STK-10

- EBP indicates that better clinical outcomes when patients with stroke are treated in a setting that provides coordinated, multi-disciplinary stroke related evaluation and services. Effective rehabilitation interventions initiated early following stroke can enhance the recovery process and minimize functional disability. The PRIMARY goal of rehabilitation is to prevent complications, minimize impairments and MAXimize function.
STK-10

STK-10 Assessed for Rehabilitation

Description: Ischemic or hemorrhagic stroke patients who were assessed for rehabilitation services.

Assessed for Rehabilitation: Documentation/Abstraction Guidelines:

- Transfer to rehabilitation meets the compliance to this indicator.
- The assessment for rehabilitation services must be completed by a qualified provider:
  - Advanced Practice Nurse
  - Kinesiotherapist
  - Neuro-psychologist
  - Occupational therapist
  - Physical therapist
  - Physician
  - Physician Assistant
  - Speech and language pathologist

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STK-10 Assessed for Rehabilitation

Description: Ischemic or hemorrhagic stroke patients who were assessed for rehabilitation services.

Reason for not completing rehabilitation:
• The documentation of a reason for not completing rehabilitation will meet compliance to this indicator.
• Example: Patient returned to prior level of function, rehabilitation not indicated at this time.
  Patient unable to tolerate rehabilitation therapeutic regimen.
STK-3: Anticoagulation Therapy for A-Fib/Flutter
How atrial fibrillation leads to stroke

1. Embolus (clot) forms in the left atrium
2. Embolus (clot) enters bloodstream and travels towards brain
3. Embolus blocks blood flow to part of the brain
4. Brain starved of oxygen leading to stroke and brain damage
5. Internal carotid artery

Atrial fibrillation
Why Anticoagulation?

Because... Why NOT?

- Statistical data provided by the ASA – 03/2016
  - Afib increases a person’s risk for stroke by 500%
  - Most Afib-related strokes (75%) can be prevented
  - Afib-related strokes cause more deaths than other strokes.
  - 2/3 of Afib patients who had strokes were NOT prescribed anticoagulants or blood thinners
  - Anticoagulation can reduce the risk of a first stroke by 60 – 80%
Why Anticoagulation?

• Reasons for not prescribing an anticoagulant
  – Allergy to all anticoagulant medications
  – Aortic dissection
  – Bleeding disorder
  – Brain/CNS cancer
  – CVA, hemorrhagic
  – Extensive/metastatic CA
  – Hemorrhage, any type
  – Intracranial surgery/biopsy
  – Patient/family refusal
  – Peptic ulcer
  – Planned surgery within 7 days following discharge
  – Risk of bleeding
  – Unrepaired intracranial aneurysm
STK-4 Thrombolytic Therapy
STK-4  Thrombolytic Therapy

Thrombolytic therapy: Acute ischemic stroke patients who arrive at this hospital within 2 hours of time last known well and for whom IV t-PA was initiated at this hospital within 3 hours of time last known well.
NINDS Trial

Two-part trial looking at efficacy of rt-PA (Activase) in acute ischemic stroke

- **Part 1**
  - 291 patients
  - Did t-PA have clinical activity?
  - Indicated by a 4 point improvement in the NIHSS or resolution of the neurologic deficit at 24 hours

- **Part 2**
  - 333 patients
  - Assessed clinical outcome at three months (using the Barthel Index, modified Rankin scale, Glasgow coma scale, & NIHSS)
Results

- Part 1 - No statistically significant difference detected between groups (treatment vs. placebo) in the primary outcome (symptom resolution or improvement of $\geq 4$ points on the NIHSS)
- Part 2 - The number of patients with favorable outcomes (based on NIHSS, Barthel, mRS, & GCS) after 3 months was higher in the treatment group than in the placebo group.

In 1996, Alteplase (activase) received FDA approval for the treatment of acute ischemic stroke within 3 hours after the onset of stroke symptoms.
STK-1: VTE Prophylaxis
STK-1

- VTE prophylaxis should be initiated by the end of hospital day 2 for all ischemic and hemorrhagic stroke patients.
- Physician/APN/PA or pharmacist documentation of a contraindication to both mechanic and pharmacological prophylaxis are acceptable.
- Documentation indicating that patient is low risk is also acceptable.
- The abstractor is not allowed to infer a reason for not ordering VTE prophylaxis.

To compute end of Hospital Day two, count the day of arrival at this hospital as day one. If antithrombotic therapy was administered by 11:59 PM of hospital day two, answer “Yes” for this data element.

Examples:
Patient arrives in ED on Monday 05:00, antithrombotic therapy must be initiated before 23:59 on Tuesday;
Patient arrives at 23:30 on Monday antithrombotic therapy must be initiated by 23:59 on Tuesday.
STK-1

- Rationale?
  - Patients with stroke are at increased risk of DVT due to limited mobility and pro-thrombotic activity
  - PE accounts for 10% of deaths after stroke
  - DVT and PE are most likely to occur in the first 3 months after the stroke
  - Symptomatic DVT slows rehab and recovery after stroke
  - Risk factors that increase the risk of DVT: age, obesity, hormone therapy, cancer
Documentation of the following situations in the medical record will suffice to pass the measure.

For patients on anticoagulants:

- For patients on continuous IV heparin therapy the day of or day after hospital admission, select "Yes."
- If warfarin is listed as a home or current medication, select "Yes."
- For patients receiving anticoagulant therapy for atrial fibrillation or for other conditions (e.g., angioplasty), with anticoagulation administered on the day of or the day after hospital admission, select "Yes."
- Documentation that the patient is adequately anticoagulated or already anticoagulated, select "Yes."
  
  Examples:
  - Patient is already anticoagulated, taking Coumadin at home prior to admission.
  - INR therapeutic and adequately anticoagulated at this time.
- Documentation synonymous with "abruptly reversed anticoagulation for major bleeding," select "Yes."
  
  Examples:
  - INR reversal for major bleeding.
  - Reverse anticoagulation for intracranial hemorrhage.
STK-1

- Methods for reducing incidence of DVT/PE
  - Pharmacological
    - Unfractionated heparin
      - Low-dose SubQ heparin will pass the measure for VTE prophylaxis, but is not acceptable to meet other stroke measures (antithrombotic by day 2 and anticoagulant for a-fib)
    - Low molecular weight heparin (enoxaparin)
    - Factor Xa inhibitors (fondaparinux)
    - Oral Factor Xa inhibitors (apixaban, rivaroxaban)
  - Mechanical
    - Compression devices, such as SCDs
    - Limited evaluation
STK-5: Antithrombotic Therapy by End of Hospital Day 2
STK-5

- Antithrombotic medication should be administered by the end of hospital day 2.
- MD/APN/PA or pharmacist documentation of a contraindication is acceptable.
- Acceptable contraindications include:
  - Aortic dissection
  - Hemorrhage
  - Patient/family refusal
  - Intracranial hemorrhage or surgery
  - Brain/CNS cancer
- Allergy to one antithrombotic is not an acceptable reason for withholding therapy.
- Administration of IV alteplase is a stand alone contraindication for this measure.
- The abstractor can’t infer a reason for not prescribing.
STK-5

- Rationale
  - Antiplatelet therapy: Disruption of the mechanism that leads to platelet aggregation reduces the formation of thrombi, resulting in a decreased risk for stroke.
  - Anticoagulants: Oral anticoagulants are recommended for patients with a-fib or other factors that increase the risk for cardio-embolic stroke.
  - Antiplatelet and anticoagulant therapy should be held for 24 hours after administration of IV Alteplase.
Examples

Antiplatelets
- Aspirin
- Sapirin/dipyridamole (Aggrenox)
- Clopidogrel (Plavix)
- Ticlopidine (Ticlid)
- Prasugrel (Effient)
- Ticagrelor (Brilinta)

Anticoagulants
- Apixaban (Eliquis)
- Argatroban
- Dabigatran (Pradaxa)
- Enoxaparin (Lovenox) (dose must be 1mg/kg in order to count for this measure)
- Fondaparinux (Arixtra)
- Heparin (SubQ is not included)
- Rivaroxaban (Xarelto)
- Warfarin
Stk-2: Discharged on Antithrombotic Therapy
Ischemic stroke or transient ischemic stroke (TIA) patients prescribed antithrombotic therapy at hospital discharge.

- Antithrombotic therapy prescribed at discharge following acute ischemic stroke has been shown to reduce stroke mortality and morbidity, as long as no contraindications exist.
## STK-2

- Antithrombotics include both anticoagulant and antiplatelet drugs.

<table>
<thead>
<tr>
<th>Antiplatelet Inclusion:</th>
<th>Anticoagulant Inclusion:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspirin</td>
<td>Apixaban (Eliquis)</td>
</tr>
<tr>
<td>Aspirin/dipyridamole (Aggrenox)</td>
<td>Argatroban</td>
</tr>
<tr>
<td>Clopidogrel (Plavix)</td>
<td>Dabigatran (Pradaxa)</td>
</tr>
<tr>
<td>Ticlopidine (Ticlid)</td>
<td>Edoxaban (Savaysa)</td>
</tr>
<tr>
<td></td>
<td>Fondaparinux (Arixtra)</td>
</tr>
<tr>
<td></td>
<td>Full dose LMW heparin</td>
</tr>
<tr>
<td></td>
<td>Lepirudin (Refludan)</td>
</tr>
<tr>
<td></td>
<td>Rivaroxaban (Xarelto)</td>
</tr>
<tr>
<td></td>
<td>Unfractionated heparin IV</td>
</tr>
<tr>
<td></td>
<td>Warfarin (Coumadin)</td>
</tr>
</tbody>
</table>
STK-2 Discharged on Antithrombotic Therapy

- Several factors may guide the decision to select a specific antiplatelet agent to initiate first after TIA or ischemic stroke:
  - Comorbid illnesses
  - Side effects
  - Costs
Examples of contraindications to antithrombotic:
- Allergy to or complication related to antithrombotic
- Serious side effect to medication
- Aortic dissection
- Bleeding disorder
- Extensive/metastatic CA
- Hemorrhage, any type
- Patient/family refusal
- Peptic ulcer
- Planned surgery within 7 days following discharge
- Risk of bleeding or discontinued due to bleeding
- Unrepaired intracranial aneurysm
- Other documented by physician/APN/PA or pharmacist
STK-6: Discharged on Statin Medication
STK-6

- Ischemic stroke or TIA patients who are prescribed statin medication at hospital discharge
  - Previous measure updated on October 1, 2015: Ischemic stroke or TIA patients with LDL greater than or equal to 100 mg/dL, or LDL not measured, or who were on a lipid-lowering medication prior to hospital arrival are prescribed statin medication at hospital discharge.
There is an extensive and consistent body of evidence supporting the use of statins for secondary prevention in patients with clinically evident atherosclerotic cardiovascular disease (ASCVD).

This includes:
- individuals with ischemic stroke due to large artery atherosclerosis
- individuals with ischemic stroke due to intrinsic small vessel disease
- individuals with ischemic stroke not directly due to atherosclerosis but with clinically evident atherosclerotic disease in an uninvolved cerebral or noncerebral bed.
High-intensity Statin Therapy: may be defined as those statin agents and doses which have been demonstrated to produce a mean LDL reduction of approximately 50% or greater

<table>
<thead>
<tr>
<th>Statin Therapy</th>
<th>women and men less than or equal to 75 years of age who have clinical ASCVD, unless contraindicated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atorvastatin (Lipitor) 40 mg or 80 mg total daily dose</td>
<td>greater than 75 years of age, the potential for ASCVD risk reduction benefits, adverse effects, drug-drug interactions, and patient preferences should be considered, and statin therapy individualized based on these considerations</td>
</tr>
<tr>
<td>Rosuvastatin (Crestor) 20 mg or 40 mg total daily dose</td>
<td></td>
</tr>
<tr>
<td>Simvastatin (Zocor or generic) 80 mg total daily dose*</td>
<td></td>
</tr>
<tr>
<td>Simvastatin/Ezetimibe (Vytorin) 10/80 mg dose*</td>
<td></td>
</tr>
</tbody>
</table>
STK-6

Examples of Contraindication to Statin

- Allergy to or complication related to statin therapy (history or current)
- Other reasons documented by physician/advanced practice nurse/physician assistant (physician/APN/PA) or pharmacist
- Patient/Family refused including patient preference for a less expensive, comparable alternative drug due to economic concerns (inability to pay).
- Serious side effect to medication
- Terminal illness/Comfort Measures Only
NIHSS
National Institutes of Health Stroke Scale

❖ What are these numbers used for
❖ When is this exam preformed
❖ Who does this exam
NIHSS

- We follow the AHA, Get With The Guidelines standard of care for stroke patients.

- 1. the score will give the eligibility for treatment of tPA or Endovascular procedure, which can range from 0 to 40.

- 2. the score will predict the level of disability,

- Example NIHSS 3, severe language deficits/mild facial or extremity weakness.

- 3. It can determine the location of the stroke by assessing the brain functions: speech, vision, movement, language, sensation, and level of consciousness
NIHSS

- The exam is done initially when stroke is activated or suspected
- It is done 24 hours post treatment
- If there is any deterioration in patients physical or mental status
- End of shift change reporting or unit change
The NIHSS can be performed by Physicians/ Nurses/ Residents.

A stroke team member that has a certified NIHSS training.

The exam is available online through the American Heart Association and the NIHSS website.
NIHSS

● AHA/ASA Guidelines for the Early Management of Adults with Ischemic Stroke. http://stroke.ahajournals.org/content/early/2013/01/31


Stroke Certification and Guidelines for Care

Dysphagia Screen
Guideline Recommendations

- All stroke patients/or suspected stroke patients should be screened prior to any oral intake(meds, food, fluids)
- Any change in pt. status a screening should be done.
- Screening should be completed within the first 24 hours of admission and documented.
- Bedside Screening can initially be preformed by a trained provider (Nursing, Physicians/Residents)
- A formal screening by speech language pathologist is recommended.
- Bedside screening can be a standard method approved by your facility
● Patient is to sit 90 degree upright
● Have oral suction available
● In any response is “no”, pt. is NPO until formal evaluation.

Each institute can establish their testing guidelines.

<table>
<thead>
<tr>
<th>If the answer is “NO” to any of the following, STOP the screening procedure</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Patient is alert and can maintain alertness, without cues, for at least 20 minutes</td>
<td>☐</td>
<td>☐ if no, stop</td>
</tr>
<tr>
<td>2. Patient has a clear strong voice and can vocalize on request</td>
<td>☐</td>
<td>☐ if no, stop</td>
</tr>
<tr>
<td>3. Patient’s speech is not slurred or garbled</td>
<td>☐</td>
<td>☐ if no, stop</td>
</tr>
<tr>
<td>4. Patient has a voluntary cough (have patient cough two times)</td>
<td>☐</td>
<td>☐ if no, stop</td>
</tr>
<tr>
<td>5. Patient is able to swallow own secretions (no drooling)</td>
<td>☐</td>
<td>☐ if no, stop</td>
</tr>
<tr>
<td>6. Patient is able to swallow a teaspoon of water, without throat clearing, choking, gurgling, coughing, dribbling, or drooling</td>
<td>☐</td>
<td>☐ if no, stop</td>
</tr>
<tr>
<td>7. Patient is able to swallow 60 ml of water (4 tablespoons), without throat clearing, choking, gurgling, coughing, dribbling, or drooling (do not use straw)</td>
<td>☐</td>
<td>☐ if no, stop</td>
</tr>
<tr>
<td>8. Patient is able to swallow liquid from a straw without throat clearing, choking, gurgling, coughing, dribbling, or drooling</td>
<td>☐</td>
<td>☐ if no, stop</td>
</tr>
<tr>
<td>9. Patient is able to swallow applesauce and/or cracker without throat clearing, choking, gurgling, coughing, dribbling, or drooling</td>
<td>☐</td>
<td>☐ if no, stop</td>
</tr>
<tr>
<td>10. Patient without coughing or throat clearing for several minutes after the screening.</td>
<td>☐</td>
<td>☐ if no, stop</td>
</tr>
</tbody>
</table>
● Rationale:

● 2014 Stroke: dysphagia is present in up to 67% of acute stroke patients, and almost 50% have aspiration, up to one third of patients will aspirate and develop pneumonia.

● Aspiration pneumonia and malnutrition increases the length of hospital stay.

• AHA/ASA.2011 Guidelines for the Primary Prevention of Stroke. Http://stroke.ahajournals.org/cgi/content/full/42/2/517

• The Joint Commission Stroke Performance Measurement Implementation Guide version 2a: Section 4
Interested in ASPECT?

Find us on Facebook at fb.me/arstrokeprofessionals.
References

- Specifications Manual for Joint Commission National Quality Measures (version 2016A) (Updated 2/19/2016 with corrected typo in PC-03 algorithm)
- (HBIPS, PC, STK, ACHF and ACHFOP Measures: applicable to Discharges 07-01-16 (3Q16) through 12-31-16 (4Q16)