Pioneers in Quality
Expert to Expert:
STK-5 – Antithrombotic Therapy By End of Hospital Day 2
STK 2 – Discharged on Antithrombotic Therapy
STK-3 – Anticoagulation Therapy for Atrial Fibrillation/Flutter

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The Objectives of this Webinar

- **Learning Objectives:**
  - Explain logic specifications for STK-5, 2, and 3
  - Discuss frequently asked questions about STK-5, 2, and 3
  - Describe changes to measure specifications applicable for 2017 reporting
STK-5: ANTITHROMBOTIC THERAPY BY END OF HOSPITAL DAY 2
Introduction STK-5

- Stroke is the No. 5 cause of death and a leading cause of serious, long-term disability in America (American Heart Association, 2015).
- The effectiveness of antithrombotic agents in reducing stroke mortality, stroke-related morbidity and recurrence rates has been studied in several large clinical trials. Aspirin is the antithrombotic agent that has been tested the most extensively.
- Early antithrombotic therapy, unless contraindicated, is recommended to reduce morbidity and mortality in patients with acute ischemic stroke.
- Oral administration of aspirin (initial dose is 325 mg) within 24 to 48 hours after stroke onset is recommended for treatment of most patients (Class I; Level of Evidence A) (Jauch EC, et. al., 2013).
STK-5: Initial Patient Population (CMS72v4)

- Patients age 18 and older discharged from inpatient care (non-elective admissions) with a principal diagnosis of ischemic or hemorrhagic stroke and a length of stay less than or equal to 120 days.

**Initial Population =**
- AND: Age >= 18 year(s) at: Occurrence A of $EncounterInpatientNonElective
- AND: Union of:
  - "Diagnosis, Active: Ischemic Stroke (ordinality: Principal)"
  - "Diagnosis, Active: Hemorrhagic Stroke (ordinality: Principal)"
  - starts during Occurrence A of $EncounterInpatientNonElective
STK-5: Denominator (CMS72v4)

- Patients with a principal diagnosis of ischemic stroke.

- **Denominator** =
  - AND: Initial Population
  - AND: "Diagnosis, Active: Ischemic Stroke (ordinality: Principal)" starts during Occurrence A of $EncounterInpatientNonElective
STK-5: Numerator (CMS72v4)

- Patients who had antithrombotic therapy administered the day of or day after hospital arrival.

Numerator =
  \( \text{AND:} \)
  - OR: "Medication, Administered: Antithrombotic Therapy" \( \leq 1\) day(s) starts after start of Occurrence A of \$EncounterInpatientNonElective
  - OR: "Encounter, Performed: Emergency Department Visit" satisfies all
    - \( \leq 1\) day(s) starts before start of "Medication, Administered: Antithrombotic Therapy"
    - \( \leq 1\) hour(s) ends before or concurrent with start of Occurrence A of \$EncounterInpatientNonElective
STK-5: Denominator Exclusions (CMS72v4)

- Patients who have a duration of stay less than 2 days

Denominator Exclusions =
- OR:
  - AND: Intersection of:
    - Occurrence A of $EncounterInpatientNonElective
    - "Encounter, Performed: Non-Elective Inpatient Encounter (length of stay < 2 day(s))"
  - AND NOT: "Encounter, Performed: Emergency Department Visit" \(<= 1\) hour(s) ends before or concurrent with start of Occurrence A of $EncounterInpatientNonElective
- OR: "Encounter, Performed: Emergency Department Visit" satisfies all
  - \(<= 1\) hour(s) ends before or concurrent with start of Occurrence A of $EncounterInpatientNonElective
  - \(< 2\) day(s) starts before end of Occurrence A of $EncounterInpatientNonElective
Denominator Exclusions =

OR:

1. AND: Intersection of:
   - Occurrence A of $EncounterInpatientNonElective
   - "Encounter, Performed: Non-Elective Inpatient Encounter (length of stay < 2 day(s))"
   - AND NOT: "Encounter, Performed: Emergency Department Visit" <= 1 hour(s) ends before or concurrent with start of Occurrence A of $EncounterInpatientNonElective

2. OR: "Encounter, Performed: Emergency Department Visit" satisfies all
   - <= 1 hour(s) ends before or concurrent with start of Occurrence A of $EncounterInpatientNonElective
   - < 2 day(s) starts before end of Occurrence A of $EncounterInpatientNonElective
STK-5: Denominator Exclusions continued

- Patients with intra-venous or intra-arterial thrombolytic (t-PA) therapy administered the day of or day after hospital arrival

- OR:
  - AND: "Occurrence A of Encounter, Performed: Emergency Department Visit" <= 1 hour(s) ends before or concurrent with start of Occurrence A of $EncounterInpatientNonElective
  - AND:
    - OR: Union of:
      - "Medication, Administered: Thrombolytic (t-PA) Therapy"
      - "Procedure, Performed: Intravenous or Intra-arterial Thrombolytic (t-PA) Therapy"
      - <= 24 hour(s) starts before start of "Occurrence A of Encounter, Performed: Emergency Department Visit"
    - OR: "Medication, Administered: Thrombolytic (t-PA) Therapy" satisfies all
    - starts after start of "Occurrence A of Encounter, Performed: Emergency Department Visit"
    - starts before end of Occurrence A of $EncounterInpatientNonElective

- OR: Union of:
  - "Medication, Administered: Thrombolytic (t-PA) Therapy"
  - "Procedure, Performed: Intravenous or Intra-arterial Thrombolytic (t-PA) Therapy"
  - <= 24 hour(s) starts before start of Occurrence A of $EncounterInpatientNonElective
  - OR: "Medication, Administered: Thrombolytic (t-PA) Therapy" starts during Occurrence A of $EncounterInpatientNonElective
- OR:
  - AND: "Occurrence A of Encounter, Performed: Emergency Department Visit" <= 1 hour(s) ends before or concurrent with start of Occurrence A of $EncounterInpatientNonElective
  - AND:
    - OR: Union of:
      - "Medication, Administered: Thrombolytic (t-PA) Therapy"
      - "Procedure, Performed: Intravenous or Intra-arterial Thrombolytic (t-PA) Therapy"
    - OR: "Medication, Administered: Thrombolytic (t-PA) Therapy" satisfies all
      - starts after start of "Occurrence A of Encounter, Performed: Emergency Department Visit"
      - starts before end of Occurrence A of $EncounterInpatientNonElective

- OR: Union of:
  - "Medication, Administered: Thrombolytic (t-PA) Therapy"
  - "Procedure, Performed: Intravenous or Intra-arterial Thrombolytic (t-PA) Therapy"
  - <= 24 hour(s) starts before start of Occurrence A of $EncounterInpatientNonElective

- OR: "Medication, Administered: Thrombolytic (t-PA) Therapy" starts during Occurrence A of $EncounterInpatientNonElective
STK-5: Denominator Exclusions continued

- Patients with comfort measures documented on the day of or day after arrival

OR:
- AND: "Occurrence A of Encounter, Performed: Emergency Department Visit" <= 1 hour(s) ends before or concurrent with start of Occurrence A of $EncounterInpatientNonElective
  AND: $InterventionComfortMeasures <= 1 day(s) starts after start of "Occurrence A of Encounter, Performed: Emergency Department Visit"
- OR: $InterventionComfortMeasures <= 1 day(s) starts after start of $EncounterInpatientNonElective

$InterventionComfortMeasures = Union of:
- "Intervention, Order: Comfort Measures"
- "Intervention, Performed: Comfort Measures"
STK-5: Denominator Exceptions (CMS72v4)

- Patients with a documented reason for not administering antithrombotic therapy the day of or day after hospital arrival.

- **Denominator Exceptions =**
  - OR:
    - AND: "Occurrence A of Encounter, Performed: Emergency Department Visit" \(\leq 1\) hour(s) ends before or concurrent with start of Occurrence A of $EncounterInpatientNonElective
    - AND: Union of:
      - "Medication, Order not done: Medical Reason" for "Antithrombotic ingredient specific"
      - "Medication, Administered not done: Medical Reason" for "Antithrombotic Therapy"
      - "Medication, Order not done: Patient Refusal" for "Antithrombotic ingredient specific"
      - "Medication, Administered not done: Patient Refusal" for "Antithrombotic Therapy"
      - \(\leq 1\) day(s) starts after start of "Occurrence A of Encounter, Performed: Emergency Department Visit"
  - OR:
    - AND: Union of:
      - "Medication, Order not done: Medical Reason" for "Antithrombotic ingredient specific"
      - "Medication, Administered not done: Medical Reason" for "Antithrombotic Therapy"
      - "Medication, Order not done: Patient Refusal" for "Antithrombotic ingredient specific"
      - "Medication, Administered not done: Patient Refusal" for "Antithrombotic Therapy"
      - \(\leq 1\) day(s) starts after start of Occurrence A of $EncounterInpatientNonElective
    - AND NOT: "Encounter, Performed: Emergency Department Visit" \(\leq 1\) hour(s) ends before or concurrent with start of Occurrence A of $EncounterInpatientNonElective
1. OR:
   - AND: "Occurrence A of Encounter, Performed: Emergency Department Visit" \(\leq\) 1 hour(s) ends before or concurrent with start of Occurrence A of $EncounterInpatientNonElective
   - AND: Union of:
     - "Medication, Order not done: Medical Reason" for "Antithrombotic ingredient specific"
     - "Medication, Administered not done: Medical Reason" for "Antithrombotic Therapy"
     - "Medication, Order not done: Patient Refusal" for "Antithrombotic ingredient specific"
     - "Medication, Administered not done: Patient Refusal" for "Antithrombotic Therapy"
     - \(\leq\) 1 day(s) starts after start of "Occurrence A of Encounter, Performed: Emergency Department Visit"

2. OR:
   - AND: Union of:
     - "Medication, Order not done: Medical Reason" for "Antithrombotic ingredient specific"
     - "Medication, Administered not done: Medical Reason" for "Antithrombotic Therapy"
     - "Medication, Order not done: Patient Refusal" for "Antithrombotic ingredient specific"
     - "Medication, Administered not done: Patient Refusal" for "Antithrombotic Therapy"
     - \(\leq\) 1 day(s) starts after start of Occurrence A of $EncounterInpatientNonElective
   - AND NOT: "Encounter, Performed: Emergency Department Visit" \(\leq\) 1 hour(s) ends before or concurrent with start of Occurrence A of $EncounterInpatientNonElective
Changes Specific to STK-5 in 2017 (CMS72v5)

- Added additional guidance language to clarify intent of measure for denominator exceptions (CQM-1512)
- Added 6 additional RxNorm codes to Antithrombotic Therapy (2.16.840.1.113883.3.117.1.7.1.201) value set
  - Includes prescribable rectal aspirin suppositories
- Removed 35 RxNorm codes from Antithrombotic Therapy value set
  - Includes enoxaparin prefilled syringes that were of insufficient dosages
STK-2: DISCHARGED ON ANTITHROMBOTIC THERAPY
Introduction STK-2

- Long-term antithrombotic therapy is recommended for secondary stroke prevention in patients with ischemic stroke.
- Four antiplatelet drugs have been approved by the FDA for prevention of vascular events among patients with a stroke or TIA (i.e., aspirin, combination aspirin/dipyridamole, clopidogrel, and ticlopidine).
- On average, these agents reduce the relative risk of stroke, MI, or death by ≈22% (Kernan WN, et. al., 2014).
- Data suggest that antithrombotic therapy should be prescribed at discharge following acute ischemic stroke to reduce stroke mortality and morbidity as long as no contraindications exist.
STK-2: Initial Patient Population (CMS104v4)

- Same as STK-5
- Patients age 18 and older discharged from inpatient care (non-elective admissions) with a principal diagnosis of ischemic or hemorrhagic stroke and a length of stay less than or equal to 120 days.

- **Initial Population =**
  - AND: Age >= 18 year(s) at: Occurrence A of $EncounterInpatientNonElective
  - AND: Union of:
    - "Diagnosis, Active: Ischemic Stroke (ordinality: Principal)"
    - "Diagnosis, Active: Hemorrhagic Stroke (ordinality: Principal)"
    - starts during Occurrence A of $EncounterInpatientNonElective
STK-2: Denominator (CMS104v4)

- Same as STK-5
- Patients with a principal diagnosis of ischemic stroke.

- Denominator =
  - AND: Initial Population
  - AND: "Diagnosis, Active: Ischemic Stroke (ordinality: Principal)" starts during Occurrence A of $EncounterInpatientNonElective
STK-2: Numerator (CMS104v4)

- Patients prescribed antithrombotic therapy at hospital discharge.

Numerator =
  - AND: "Medication, Discharge: Antithrombotic Therapy" starts during Occurrence A of $EncounterInpatientNonElective
STK-2: Denominator Exclusions (CMS104v4)

- Patients with a discharge disposition of:
  - Discharged to another hospital
  - Left against medical advice
  - Expired
  - Discharged to home for hospice
  - Discharged to a health care facility for hospice care
STK-2: Denominator Exclusions continued

- Patients with comfort measures documented.
- Patients admitted for elective carotid intervention.

OR: $InterventionComfortMeasures starts during ("Encounter, Performed: Emergency Department Visit" <= 1 hour(s) ends before or concurrent with start of Occurrence A of $EncounterInpatientNonElective )

OR: $InterventionComfortMeasures starts during Occurrence A of $EncounterInpatientNonElective
STK-2: Denominator Exceptions (CMS104v4)

- The denominator exceptions reflect the *Reason for Not Prescribing Antithrombotic Therapy at Discharge:*
  - Patient refusal
  - Medical reason

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• Denominator Exceptions =
  • OR: Union of:
    • "Medication, Discharge not done: Medical Reason" for "Antithrombotic ingredient specific"
    • "Medication, Discharge not done: Patient Refusal" for "Antithrombotic ingredient specific"
    • starts during Occurrence A of $EncounterInpatientNonElective
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**Changes Specific to STK-2 in 2017 (CMS104v5)**

- Same as STK-5
- Based on JIRA request:
  - Added 6 additional RxNorm codes to Antithrombotic Therapy (2.16.840.1.113883.3.117.1.7.1.201) value set
    - Includes prescribable rectal aspirin suppositories
  - Removed 35 RxNorm codes from Antithrombotic Therapy value set
    - Includes enoxaparin prefilled syringes that were of insufficient dosages
STK-3: ANTICOAGULATION THERAPY FOR ATRIAL FIBRILLATION/FLUTTER
Introduction STK-3

- Atrial fibrillation / flutter (AF/AFF) increases an individual’s risk for stroke five-fold. Nearly 20% of all strokes are attributed to this arrhythmia (CardioSource, 2013).

- Multiple clinical trials have demonstrated that relative risk of thromboembolic stroke was reduced by 68% for atrial fibrillation patients treated with warfarin. Recent studies indicate that newer direct oral anticoagulant medications may be administered to select patients for secondary prevention of cardioembolic stroke.

- Anticoagulant therapy, i.e., vitamin K antagonist (VKA) therapy (Class I; Level of Evidence A), apixaban (Class I; Level of Evidence A), and dabigatran (Class I; Level of Evidence B) are all indicated for the prevention of recurrent stroke in patients with nonvalvular AF, whether paroxysmal or permanent. Rivaroxaban is reasonable for the prevention of recurrent stroke in patients with nonvalvular AF (Class IIa; Level of Evidence B) (Kernan WN, et. al., 2014).
STK-3: Initial Patient Population (CMS71v5)

- Same as STK-5 and STK-2
- Patients age 18 and older discharged from inpatient care (non-elective admissions) with a principal diagnosis of ischemic or hemorrhagic stroke and a length of stay less than or equal to 120 days.

Initial Population =
- AND: Age >= 18 year(s) at: Occurrence A of $EncounterInpatientNonElective
- AND: Union of:
  - "Diagnosis, Active: Ischemic Stroke (ordinality: Principal)"
  - "Diagnosis, Active: Hemorrhagic Stroke (ordinality: Principal)"
  - starts during Occurrence A of $EncounterInpatientNonElective
STK-3: Denominator (CMS71v5)

- Patients with a principal diagnosis of ischemic stroke, and a history of atrial ablation, or current or history of atrial fibrillation/flutter.

**Denominator =**
- AND: Initial Population
- AND: "Diagnosis, Active: Ischemic Stroke (ordinality: Principal)" starts during Occurrence A of $EncounterInpatientNonElective
- AND: Union of:
  - "Procedure, Performed: Atrial Ablation" starts before start of Occurrence A of $EncounterInpatientNonElective
  - "Diagnosis, Active: Atrial Fibrillation/Flutter" starts before or concurrent with end of Occurrence A of $EncounterInpatientNonElective
  - "Diagnosis, Inactive: Atrial Fibrillation/Flutter" starts before start of Occurrence A of $EncounterInpatientNonElective
STK-3: Numerator (CMS71v5)

- Patients prescribed anticoagulation therapy at hospital discharge.

\[
\text{Numerator} = \text{AND: "Medication, Discharge: Anticoagulant Therapy" starts during Occurrence A of $\text{EncounterInpatientNonElective}}
\]
STK-3: Denominator Exclusions (CMS71v5)

- Same as STK-2
- Patients with a discharge disposition of:
  - Discharged to another hospital
  - Left against medical advice (AMA)
  - Expired
  - Discharged to home for hospice care
  - Discharged to a health care facility for hospice care
STK-3: Denominator Exclusions continued

- Patients with comfort measures documented.
- Patients admitted for elective carotid intervention.

OR: $\text{InterventionComfortMeasures}$ starts during ("Encounter, Performed: Emergency Department Visit" <= 1 hour(s) ends before or concurrent with start of Occurrence A of $\text{EncounterInpatientNonElective}$)
OR: $\text{InterventionComfortMeasures}$ starts during Occurrence A of $\text{EncounterInpatientNonElective}$
STK-3: Denominator Exceptions (CMS71v5)

- Patients with a documented reason for not prescribing anticoagulation therapy at discharge.

- Denominator Exceptions =
  - OR: Union of:
    - "Medication, Discharge not done: Medical Reason" for "Anticoagulant ingredient specific"
    - "Medication, Discharge not done: Patient Refusal" for "Anticoagulant ingredient specific"
    - starts during Occurrence A of $EncounterInpatientNonElective
Changes Specific to STK-3 in 2017 (CMS71v6)

- Updated denominator header statement to better align with measure logic
  - Patients with a principal diagnosis of ischemic stroke, and a history of atrial ablation, or current or history of atrial fibrillation/flutter

- Based on JIRA request
  - Added 2 RxNorm codes to Anticoagulant Therapy (2.16.840.1.113883.3.117.1.7.1.200) value set (removed 18 codes)
GENERAL STK CHANGES FOR 2017
General STK changes for 2017

- Introduced encounter diagnoses, including principal
- Respecified *Diagnosis* datatypes
- Ischemic Stroke value set:
  - Added 3 SNOMEDCT codes
  - Deleted 5 SNOMEDCT codes
  - Deleted 18 ICD10CM codes
- Medical Reason (2.16.840.1.113883.3.117.1.7.1.473)
  - Deleted 1 SNOMEDCT code
QDM 4.2: Encounter Diagnoses

- **Encounter, Performed (principal diagnosis)**
  - The coded diagnosis/problem established after study to be chiefly responsible for occasioning the admission of the patient to the hospital for care
  - Expectation: Only 1 principal diagnosis per encounter
QDM 4.2: Encounter Diagnoses

- **Encounter, Performed (diagnosis)**
  - A coded diagnosis/problem addressed during the encounter
Example: Encounter Diagnoses

- STK-5 Denominator changed from:

  - \( \text{Denominator} = \)
    - AND: Initial Population
    - AND: "Diagnosis, Active: Ischemic Stroke (ordinality: Principal)" starts during Occurrence A of \$\text{EncounterInpatientNonElective}"

- To:

  - \( \text{Denominator} = \)
    - AND: Initial Population
    - AND: Intersection of:
      - Occurrence A of \$\text{EncounterInpatientNonElective}"
      - "Encounter, Performed: Non-Elective Inpatient Encounter (principal diagnosis: Ischemic Stroke)"
Please send additional feedback on the content of this program, and your suggestions to improve future programs, to:

PioneersInQuality@jointcommission.org