### STROKE NATIONAL HOSPITAL INPATIENT QUALITY MEASURES

<table>
<thead>
<tr>
<th>Set Measure ID #</th>
<th>Measure Short Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>STK-1&lt;sup&gt;1,2&lt;/sup&gt;</td>
<td>Venous Thromboembolism (VTE) Prophylaxis</td>
</tr>
<tr>
<td>STK-2&lt;sup&gt;1,2&lt;/sup&gt;</td>
<td>Discharged on Antithrombotic Therapy</td>
</tr>
<tr>
<td>STK-3&lt;sup&gt;1,2&lt;/sup&gt;</td>
<td>Anticoagulation Therapy for Atrial Fibrillation/Flutter</td>
</tr>
<tr>
<td>STK-4&lt;sup&gt;1,2&lt;/sup&gt;</td>
<td>Thrombolytic Therapy</td>
</tr>
<tr>
<td>STK-5&lt;sup&gt;1,2&lt;/sup&gt;</td>
<td>Antithrombotic Therapy By End of Hospital Day 2</td>
</tr>
<tr>
<td>STK-6&lt;sup&gt;1,2&lt;/sup&gt;</td>
<td>Discharged on Statin Medication</td>
</tr>
<tr>
<td>STK-8&lt;sup&gt;1,2&lt;/sup&gt;</td>
<td>Stroke Education</td>
</tr>
<tr>
<td>STK-10&lt;sup&gt;1,2&lt;/sup&gt;</td>
<td>Assessed for Rehabilitation</td>
</tr>
</tbody>
</table>

<sup>1</sup>CMS Informational ONLY  
<sup>2</sup>The Joint Commission ONLY
## STROKE DATA ELEMENT LIST

<table>
<thead>
<tr>
<th>General Data Element Name</th>
<th>Collected For:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admission Date</td>
<td>All Records</td>
</tr>
<tr>
<td>Birthdate</td>
<td>All Records</td>
</tr>
<tr>
<td>Discharge Date</td>
<td>All Records</td>
</tr>
<tr>
<td>Discharge Status</td>
<td>All Records (Used in Algorithm for STK-2, STK-3, STK-6, STK-8, STK-10)</td>
</tr>
<tr>
<td>ICD-9-CM Other Diagnosis Codes</td>
<td>All Records</td>
</tr>
<tr>
<td>ICD-9-CM Other Procedure Codes</td>
<td>All Records</td>
</tr>
<tr>
<td>ICD-9-CM Other Procedure Dates</td>
<td>All Records</td>
</tr>
<tr>
<td>ICD-9-CM Principal Diagnosis Code</td>
<td>All Records (Used in Algorithm for STK-2, STK-3, STK-4, STK-5, STK-6)</td>
</tr>
<tr>
<td>ICD-9-CM Principal Procedure Code</td>
<td>All Records</td>
</tr>
<tr>
<td>ICD-9-CM Principal Procedure Date</td>
<td>All Records</td>
</tr>
<tr>
<td>Payment Source</td>
<td>All Records</td>
</tr>
<tr>
<td>Point of Origin for Admission or Visit</td>
<td>All Records</td>
</tr>
</tbody>
</table>
| Sample                            | Used in transmission of the Joint Commission’s aggregate data file and the Hospital Clinical Data file

<table>
<thead>
<tr>
<th>Algorithm Output Data Element Name</th>
<th>Collected For:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measure Category Assignment</td>
<td>Used in the calculation of the Joint Commission’s aggregate data and in the transmission of the Hospital Clinical Data file</td>
</tr>
</tbody>
</table>

³Transmission Data Element
<table>
<thead>
<tr>
<th>STK Data Element Name</th>
<th>Collected For:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticoagulation Therapy Prescribed At Discharge</td>
<td>STK-3</td>
</tr>
<tr>
<td>Antithrombotic Therapy Administered by End of Hospital Day 2</td>
<td>STK-5</td>
</tr>
<tr>
<td>Antithrombotic Therapy Prescribed At Discharge</td>
<td>STK-2</td>
</tr>
<tr>
<td>Arrival Date</td>
<td>STK-4, STK-5</td>
</tr>
<tr>
<td>Arrival Time</td>
<td>STK-4</td>
</tr>
<tr>
<td>Assessed for Rehabilitation Services</td>
<td>STK-10</td>
</tr>
<tr>
<td>Atrial Fibrillation/Flutter</td>
<td>STK-3</td>
</tr>
<tr>
<td>Clinical Trial</td>
<td>All STK Measures</td>
</tr>
<tr>
<td>Comfort Measures Only</td>
<td>STK-1, STK-2, STK-3, STK-5, STK-6, STK-8, STK-10</td>
</tr>
<tr>
<td>Date Last Known Well</td>
<td>STK-4</td>
</tr>
<tr>
<td>ED Patient</td>
<td>STK-4</td>
</tr>
<tr>
<td>Education Addresses Activation of Emergency Medical System</td>
<td>STK-8</td>
</tr>
<tr>
<td>Education Addresses Follow-up After Discharge</td>
<td>STK-8</td>
</tr>
<tr>
<td>Education Addresses Medications Prescribed at Discharge</td>
<td>STK-8</td>
</tr>
<tr>
<td>Education Addresses Risk Factors For Stroke</td>
<td>STK-8</td>
</tr>
<tr>
<td>Education Addresses Warning Signs and Symptoms of Stroke</td>
<td>STK-8</td>
</tr>
<tr>
<td>Elective Carotid Intervention</td>
<td>All STK Measures</td>
</tr>
<tr>
<td>Evidence of Atherosclerosis</td>
<td>STK-6</td>
</tr>
<tr>
<td>IV OR IA Thrombolytic (t-PA) Therapy Administered at This Hospital or Within 24 Hours Prior to Arrival</td>
<td>STK-5</td>
</tr>
<tr>
<td>IV Thrombolytic Initiation</td>
<td>STK-4</td>
</tr>
<tr>
<td>IV Thrombolytic Initiation Date</td>
<td>STK-4</td>
</tr>
<tr>
<td>IV Thrombolytic Initiation Time</td>
<td>STK-4</td>
</tr>
<tr>
<td>Last Known Well</td>
<td>STK-4</td>
</tr>
<tr>
<td>LDL-c Greater Than or Equal to 100 mg/dL</td>
<td>STK-6</td>
</tr>
<tr>
<td>LDL-c Measured Within the First 48 Hours or 30 Days Prior to Hospital Arrival</td>
<td>STK-6</td>
</tr>
<tr>
<td>Pre-Arrival Lipid-Lowering Agent</td>
<td>STK-6</td>
</tr>
<tr>
<td>Reason for No VTE Prophylaxis – Hospital Admission</td>
<td>STK-1</td>
</tr>
<tr>
<td>Reason For Not Administering Antithrombotic Therapy By End of Hospital Day 2</td>
<td>STK-5</td>
</tr>
<tr>
<td>Reason For Not Initiating IV Thrombolytic</td>
<td>STK-4</td>
</tr>
<tr>
<td>STK Data Element Name</td>
<td>Collected For:</td>
</tr>
<tr>
<td>-----------------------------------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Reason For Not Prescribing Anticoagulation Therapy at Discharge</td>
<td>STK-3</td>
</tr>
<tr>
<td>Reason For Not Prescribing Antithrombotic Therapy at Discharge</td>
<td>STK-2</td>
</tr>
<tr>
<td>Reason For Not Prescribing Statin Medication At Discharge</td>
<td>STK-6</td>
</tr>
<tr>
<td>Statin Medication Prescribed At Discharge</td>
<td>STK-6</td>
</tr>
<tr>
<td>Time Last Known Well</td>
<td>STK-4</td>
</tr>
<tr>
<td>VTE Prophylaxis</td>
<td>STK-1</td>
</tr>
<tr>
<td>VTE Prophylaxis Date</td>
<td>STK-1</td>
</tr>
</tbody>
</table>
Stroke (STK) Initial Patient Population

The population of the STK measure set is identified using 4 data elements:

- **ICD-9-CM Principal Diagnosis Code**
- **Admission Date**
- **Birthdate**
- **Discharge Date**

Patients admitted to the hospital for inpatient acute care with an *ICD-9-CM Principal Diagnosis Code* for ischemic or hemorrhagic stroke as defined in Appendix A, Table 8.1 or Table 8.2, a Patient Age (*Admission Date* minus *Birthdate*) greater than or equal to 18 years and a Length of Stay (*Discharge Date* minus *Admission Date*) less than or equal to 120 days are included in the STK Initial Patient Population and are eligible to be sampled.
STK Initial Patient Population Algorithm

Start STK Initial Patient Population logic sub-routine

ICD-9-CM Principal Diagnosis Code

On Table 8.1 or 8.2

Not on Table 8.1 and 8.2

Patient Age (in years) = Admission Date minus Birthdate

Use the month and day portion of admission date and birthdate to yield the most accurate age

Patient Age

< 18 years

>= 18 years

Length of Stay (in days) = Discharge Date minus Admission Date

Length of Stay

<= 120 days

> 120 days

Patient is in the STK Initial Patient Population

Patient is eligible to be sampled* for the STK measure set

Set Initial Patient Population Reject Case Flag = "No"

Return to Data Processing Flow (Data Transmission section)

Patient is not in the STK Initial Patient Population

Patient is not eligible to be sampled for the STK measure set

Set Initial Patient Population Reject Case Flag = "Yes"

Specifications Manual for National Hospital Inpatient Quality Measures

Discharges 04-01-10 (2Q10) through 09-30-10 (3Q10)
Stroke (STK) Initial Patient Population Algorithm

Variable Key: Patient Age, Initial Patient Population Reject Case Flag, and Length of Stay

1. Start STK Initial Patient Population logic sub-routine. Process all cases that have successfully reached the point in the Data Processing Flow which calls this Initial Patient Population Algorithm. Do not process cases that have been rejected before this point in the Data Processing Flow.

2. Check ICD-9-CM Principal Diagnosis Code
   a. If the ICD-9-CM Principal Diagnosis Code is not on Table 8.1 and 8.2, the patient is not in the STK Initial Patient Population and is not eligible to be sampled for the STK measure set. Set the Initial Patient Population Reject Case Flag to equal Yes. Return to Data Processing Flow in the Data Transmission section.
   b. If the ICD-9-CM Principal Diagnosis Code is on Table 8.1 or 8.2, continue processing and proceed to the patient age calculation.

3. Calculate Patient Age. Patient Age, in years, is equal to the Admission Date minus the Birthdate. Use the month and day portion of admission date and birthdate to yield the most accurate age.

4. Check Patient Age
   a. If the Patient Age is less than 18 years, the patient is not in the STK Initial Patient Population and is not eligible to be sampled for the STK measure set. Set the Initial Patient Population Reject Case Flag to equal Yes. Return to Data Processing Flow in the Data Transmission section.
   b. If the Patient Age is greater than or equal to 18 years, continue processing and proceed to Length of Stay Calculation.

5. Calculate the Length of Stay. Length of Stay, in days, is equal to the Discharge Date minus the Admission Date.

6. Check Length of Stay
   a. If the Length of Stay is greater than 120 days, the patient is not in the STK Initial Patient Population and is not eligible to be sampled for the STK measure set. Set the Initial Patient Population Reject Case Flag to equal Yes. Return to Data Processing Flow in the Data Transmission section.
   b. If the Length of Stay is less than or equal to 120 days, the patient is in the STK Initial Patient Population and is eligible to be sampled for the STK measure set. Set Initial Patient Population Reject Case Flag to equal No. Return to Data Processing Flow in the Data Transmission section.
STK Sample Size Requirements

Hospitals that choose to sample have the option of sampling quarterly or sampling monthly. A hospital may choose to use a larger sample size than is required. Hospitals whose Initial Patient Population size is less than the minimum number of cases per quarter for the measure set cannot sample. Hospitals that have five or fewer STK discharges (both Medicare and non-Medicare combined) in a quarter are not required to submit STK patient level data to the Joint Commission’s Data Warehouse.

Regardless of the option used, hospital samples must be monitored to ensure that sampling procedures consistently produce statistically valid and useful data. Due to exclusions, hospitals selecting sample cases MUST submit AT LEAST the minimum required sample size.

The following sample size tables for each option automatically build in the number of cases needed to obtain the required sample sizes. For information concerning how to perform sampling, refer to the Population and Sampling Specifications section in this manual.

Quarterly Sampling
Hospitals performing quarterly sampling for STK must ensure that its Initial Patient Population and sample size meet the following conditions:

<table>
<thead>
<tr>
<th>Hospital’s Measure</th>
<th>Average Quarterly Initial Patient Population Size “N”</th>
<th>Minimum Required Sample Size “n”</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>≥ 900</td>
<td>180</td>
</tr>
<tr>
<td></td>
<td>226-899</td>
<td>20% of Initial Patient Population size</td>
</tr>
<tr>
<td></td>
<td>45-225</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>&lt; 45</td>
<td>No sampling; 100% Initial Patient Population required</td>
</tr>
<tr>
<td></td>
<td>0-5</td>
<td>Submission of patient level data is not required; if submission occurs, 100% Initial Patient Population required</td>
</tr>
</tbody>
</table>
Monthly Sampling
Hospitals performing monthly sampling for STK must ensure that its Initial Patient Population and sample size meet the following conditions:

Monthly Sample Size
Based on Initial Patient Population Size for the STK Measure Set

<table>
<thead>
<tr>
<th>Hospital’s Measure</th>
<th>Average Monthly Initial Patient Population Size “N”</th>
<th>Minimum Required Sample Size “n”</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>≥ 300</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>76-299</td>
<td>20% of Initial Patient Population size</td>
</tr>
<tr>
<td></td>
<td>15-75</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>&lt; 15</td>
<td>No sampling; 100% Initial Patient Population required</td>
</tr>
</tbody>
</table>

Sample Size Examples

- Quarterly sampling:
  - A hospital’s STK Initial Patient Population size is 100 patients during the fourth quarter. The required sample size is seen to be a minimum of 45 STK patients for this quarter.
  - A hospital’s STK Initial Patient Population size is 392 patients during the third quarter. The required sample size is 20% of the patient population or 79 cases for the quarter (twenty percent of 392 equals 78.4 rounded to the next highest whole number equals 79).
  - A hospital’s STK Initial Patient Population is 4 patients during the first quarter. Submission of patient level data is not required. If the hospital chooses to submit patient level data, the required quarterly sample size would be 100% of the patient population or 4 cases for the quarter.

- Monthly sampling
  - A hospital’s STK Initial Patient Population size is 316 patients during March. The required sample size is 60 cases from the patient population.
  - A hospital’s STK Initial Patient Population size is 228 patients during July. The required sample size is 20% of the patient population or 46 cases for the month (twenty percent of 228 equals 45.6 rounded to the next highest whole number equals 46).
NQF ENDORSED VOLUNTARY CONSENSUS STANDARDS FOR HOSPITAL CARE

Measure Information Form
Collected For: The Joint Commission Only
CMS Informational Only

Measure Set: Stroke (STK)

Set Measure ID #: STK-1

Performance Measure Name: Venous Thromboembolism (VTE) Prophylaxis

Description: Ischemic and hemorrhagic stroke patients who received VTE prophylaxis or have documentation why no VTE prophylaxis was given the day of or the day after hospital admission.

Rationale: Stroke patients are at increased risk of developing venous thromboembolism (VTE). One study noted proximal deep vein thrombosis in more than a third of patients with moderately severe stroke. Reported rates of occurrence vary depending on the type of screening used. Prevention of VTE, through the use of prophylactic therapies, in at risk patients is a noted recommendation in numerous clinical practice guidelines. For acutely ill stroke patients who are confined to bed, thromboprophylaxis with low-molecular-weight heparin (LMWH), low-dose unfractionated heparin (LDUH), or fondaparinux is recommended if there are no contraindications. Aspirin alone is not recommended as an agent to prevent VTE.

Type of Measure: Process

Improvement Noted As: An increase in rate

Numerator Statement: Ischemic or hemorrhagic stroke patients who received VTE prophylaxis or have documentation why no VTE prophylaxis was given on the day of or the day after hospital admission.

Included Populations: Not applicable

Excluded Populations: None

Data Elements:
- Reason for No VTE Prophylaxis – Hospital Admission
- VTE Prophylaxis
- VTE Prophylaxis Date

Denominator Statement: Ischemic or hemorrhagic stroke patients
Included Populations: Discharges with an ICD-9-CM Principal Diagnosis Code for ischemic or hemorrhagic stroke as defined in Appendix A, Table 8.1 or Table 8.2.

Excluded Populations:
- Patients less than 18 years of age
- Patients who have a Length of Stay less than 2 days
- Patients who have a Length of Stay greater than 120 days
- Patients with Comfort Measures Only documented on day of or day after hospital admission
- Patients enrolled in clinical trials
- Patients admitted for Elective Carotid Intervention

Data Elements:
- Admission Date
- Birthdate
- Clinical Trial
- Comfort Measures Only
- Discharge Date
- Elective Carotid Intervention
- ICD-9-CM Principal Diagnosis Code

Risk Adjustment: No

Data Collection Approach: Retrospective data sources for required data elements include administrative data and medical records.

Data Accuracy: Variation may exist in the assignment of ICD-9-CM codes; therefore, coding practices may require evaluation to ensure consistency.

Measure Analysis Suggestions: None

Sampling: Yes, for additional information see the Population and Sampling Specifications section.

Data Reported As: Aggregate rate generated from count data reported as a proportion
Selected References:


- Duncan et al, Stroke Rehabilitation Clinical Practice Guidelines (*Stroke*. 2005;36:e100-e143.)


- Post-Stroke Rehabilitation Guideline No.16, Agency for Healthcare Policy and Research (Now known as Agency for Healthcare Research and Quality), 1995

STK-1: Venous Thromboembolism Prophylaxis

**Numerator:** Ischemic or hemorrhagic stroke patients who received VTE prophylaxis or have documentation why no VTE prophylaxis was given on the day of or the day after hospital admission.

**Denominator:** Ischemic or hemorrhagic stroke patients

---

**Variable Key:**
- \( \text{LOS} \)
- \( \text{VTE Prophylaxis Day} \)

---

**Diagram:**
- **START**
  - Run cases that are included in the Stroke Initial Patient Population and pass the edits defined in the Data Processing Flow through this measure.
  - **Comfort Measures Only**
    - Missing
    - \( X \)
    - \(-1\)
    - **STK-1 B**
  - \(-2, 3, 4\)
  - **Clinical Trial**
    - Missing
    - **STK-1 X**
    - **STK-1 B**
  - \( Y \)
    - **STK-1 B**
  - **Elective Carotid Intervention**
    - Missing
    - **STK-1 X**
    - \( Y \)
    - **STK-1 B**
  - \( N \)
  - **Length of Stay (LOS) (in days) = Discharge Date – Admission Date**
  - **LOS**
    - \( \geq 0 \text{ and } < 2 \)
    - **STK-1 B**
  - \( \geq 2 \)
    - **STK-1 H**
  - **Not In Measure Population**
    - **STK-1 Z**
VTE Prophylaxis

Case Will Be Rejected

Missing

VTE Prophylaxis Date

Non-UTD value

VTE Prophylaxis Day (in days) = VTE Prophylaxis Date - Admission Date

VTE Prophylaxis Day

≥ 2

In Measure Population

Stop
Measure Information Form
Collected For: The Joint Commission Only
CMS Informational Only

NQF ENDORED VOLUNTARY CONSENSUS STANDARDS FOR HOSPITAL CARE

Measure Set: Stroke (STK)

Measure ID: STK-2

Performance Measure Name: Discharged on Antithrombotic Therapy

Description: Ischemic stroke patients prescribed antithrombotic therapy at hospital discharge

Rationale: The effectiveness of antithrombotic agents in reducing stroke mortality, stroke-related morbidity and recurrence rates has been studied in several large clinical trials. While the use of these agents for patients with acute ischemic stroke and transient ischemic attacks continues to be the subject of study, substantial evidence is available from completed studies. Data at this time 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. For patients with a stroke due to a cardioembolic source (e.g., atrial fibrillation, mechanical heart valve), warfarin is recommended unless contraindicated. Warfarin is not generally recommended for secondary stroke prevention in patients presumed to have a non-cardioembolic stroke.

Anticoagulants at doses to prevent venous thromboembolism are insufficient antithrombotic therapy to prevent recurrent ischemic stroke or TIA.

Type of Measure: Process

Improvement Noted As: An increase in rate

Numerator Statement: Ischemic stroke patients prescribed antithrombotic therapy at hospital discharge

Included Populations: Not applicable

Excluded Populations: None

Data Elements: Antithrombotic Therapy Prescribed at Discharge

Denominator Statement: Ischemic stroke patients

Specifications Manual for National Hospital Inpatient Quality Measures
Discharges 04-01-10 (2Q10) through 09-30-10 (3Q10)
**Included Populations:**
Discharges with an *ICD-9-CM Principal Diagnosis Code* for ischemic stroke as defined in Appendix A, Table 8.1.

**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*
- Patients discharged/transferred to another hospital for inpatient care
- Patients who left against medical advice or discontinued care
- Patients who expired
- Patients discharged/transferred to a federal health care facility
- Patients discharged/transferred to hospice
- Patients with a documented *Reason For Not Prescribing Antithrombotic Therapy at Discharge*

**Data Elements:**
- *Admission Date*
- *Birthdate*
- *Clinical Trial*
- *Comfort Measures Only*
- *Discharge Date*
- *Discharge Status*
- *Elective Carotid Intervention*
- *ICD-9-CM Principal Diagnosis Code*
- *Reason For Not Prescribing Antithrombotic Therapy at Discharge*

**Risk Adjustment:** No

**Data Collection Approach:** Retrospective data sources for required data elements include administrative data and medical records.

**Data Accuracy:** Variation may exist in the assignment of ICD-9-CM codes; therefore, coding practices may require evaluation to ensure consistency.

**Measure Analysis Suggestions:** None

**Sampling:** Yes, for additional information see the Population and Sampling Specifications section.

**Data Reported As:** Aggregate rate generated from count data reported as a proportion
Selected References:


- Guideline on the Use of Aspirin as Secondary Prophylaxis for Vascular Disease in Primary Care, Centre for Health Services Research University of Newcastle upon Tyne, & Centre for Health Economics of York, 1998.

STK-2: Discharged on Antithrombotic Therapy

Numerator: Ischemic stroke patients prescribed antithrombotic therapy at hospital discharge
Denominator: Ischemic stroke patients.

Specifications Manual for National Hospital Inpatient Quality Measures
Discharges 04-01-10 (2Q10) through 09-30-10 (3Q10)
Measure Information Form

Collected For: The Joint Commission Only
CMS Informational Only

Measure Set: Stroke (STK)

Set Measure ID #: STK-3

Performance Measure Name: Anticoagulation Therapy for Atrial Fibrillation/Flutter

Description: Ischemic stroke patients with atrial fibrillation/flutter who are prescribed anticoagulation therapy at hospital discharge.

Rationale: Nonvalvular atrial fibrillation (NVAF) is a common arrhythmia and an important risk factor for stroke. It is one of several conditions and lifestyle factors that have been identified as risk factors for stroke. It has been estimated that over 2 million adults in the United States have NVAF. While the median age of patients with atrial fibrillation is 75 years, the incidence increases with advancing age. For example, The Framingham Heart Study noted a dramatic increase in stroke risk associated with atrial fibrillation with advancing age, from 1.5% for those 50 to 59 years of age to 23.5% for those 80 to 89 years of age. Furthermore, a prior stroke or transient ischemic attack (TIA) are among a limited number of predictors of high stroke risk within the population of patients with atrial fibrillation. Therefore, much emphasis has been placed on identifying methods for preventing recurrent ischemic stroke as well as preventing first stroke. Prevention strategies focus on the modifiable risk factors such as hypertension, smoking, and atrial fibrillation. Analysis of five placebo-controlled clinical trials investigating the efficacy of warfarin in the primary prevention of thromboembolic stroke, found the relative risk of thromboembolic stroke was reduced by 68% for atrial fibrillation patients treated with warfarin. The administration of anticoagulation therapy, unless there are contraindications, is an established effective strategy in preventing recurrent stroke in high stroke risk-atrial fibrillation patients with TIA or prior stroke.

Type of Measure: Process

Improvement Noted As: An increase in rate

Numerator Statement: Ischemic stroke patients prescribed anticoagulation therapy at hospital discharge

Included Populations: Not applicable

Excluded Populations: None

Specifications Manual for National Hospital Inpatient Quality Measures
Discharges 04-01-10 (2Q10) through 09-30-10 (3Q10)
Data Elements:
Anticoagulation Therapy Prescribed at Discharge

Denominator Statement: Ischemic stroke patients with documented atrial fibrillation/flutter

Included Populations:
- Discharges with an ICD-9-CM Principal Diagnosis Code for ischemic stroke as defined in Appendix A, Table 8.1
- Patients with documented Atrial Fibrillation/Flutter

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
- Patients discharged/transferred to another hospital for inpatient care
- Patients who left against medical advice or discontinued care
- Patients who expired
- Patients discharged/transferred to a federal health care facility
- Patients discharged/transferred to hospice
- Patients with a documented Reason For Not Prescribing Anticoagulation Therapy

Data Elements:
- Admission Date
- Atrial Fibrillation/Flutter
- Birthdate
- Clinical Trial
- Comfort Measures Only
- Discharge Date
- Discharge Status
- Elective Carotid Intervention
- ICD-9-CM Principal Diagnosis Code
- Reason For Not Prescribing Anticoagulation Therapy

Risk Adjustment: No

Data Collection Approach: Retrospective data sources for required data elements include administrative data and medical records.

Data Accuracy: Variation may exist in the assignment of ICD-9-CM codes; therefore, coding practices may require evaluation to ensure consistency.
Measure Analysis Suggestions: None

Sampling: Yes, for additional information see the Population and Sampling Specifications section.

Data Reported As: Aggregate rate generated from count data reported as a proportion

Selected References:
STK-3: Patients with Atrial Fibrillation/Flutter Receiving Anticoagulation Therapy

**Numerator:** Ischemic stroke patients prescribed anticoagulation therapy at hospital discharge.

**Denominator:** Ischemic stroke patients with documented atrial fibrillation/flutter.

![Decision Tree Diagram]
Measure Information Form
Collected For: The Joint Commission Only
CMS Informational Only

Measure Set: Stroke (STK)
Set Measure ID #: STK-4:

Performance Measure Name: Thrombolytic Therapy

Description: 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.

Rationale: The administration of thrombolytic agents to carefully screened, eligible patients with acute ischemic stroke has been shown to be beneficial in several clinical trials. These included two positive randomized controlled trials in the United States: The National Institute of Neurological Disorders and Stroke (NINDS) Studies, Part I and Part II. Based on the results of these studies, the Food and Drug Administration approved the use of intravenous recombinant tissue plasminogen activator (IV r-TPA or t-PA) for the treatment of acute ischemic stroke when given within 3 hours of stroke symptom onset. A large meta-analysis controlling for factors associated with stroke outcome confirmed the benefit of IV t-PA in patients treated within 3 hours of symptom onset. While controversy still exists among some specialists, the major society practice guidelines developed in the United States all recommend the use of IV t-PA for eligible patients. Physicians with experience and skill in stroke management and the interpretation of CT scans should supervise treatment.

Type of Measure: Process

Improvement Noted As: An increase in rate

Numerator Statement: Acute ischemic stroke patients for whom IV thrombolytic therapy was initiated at this hospital within 3 hours (less than or equal to 180 minutes) of time last known well

Included Populations: Not applicable

Excluded Populations: None
Data Elements:
- Date Last Known Well
- Time Last Known Well
- IV Thrombolytic Initiation
- IV Thrombolytic Initiation Date
- IV Thrombolytic Initiation Time

Denominator Statement: Acute ischemic stroke patients whose time of arrival is within 2 hours (less than or equal to 120 minutes) of time last known well

Included Populations:
Discharges with an ICD-9-CM Principal Diagnosis Code for ischemic stroke as defined in Appendix A, Table 8.1

Excluded Populations:
- Patients less than 18 years of age
- Patients who have a Length of Stay greater than 120 days
- Patients enrolled in clinical trials
- Patients admitted for Elective Carotid Intervention
- Time Last Known Well to arrival in the emergency department greater than 2 hours
- Patients with a documented Reason For Not Initiating IV Thrombolytic

Data Elements:
- Admission Date
- Arrival Date
- Arrival Time
- Birthdate
- Clinical Trial
- Date Last Known Well
- Discharge Date
- ED Patient
- Elective Carotid Intervention
- ICD-9-CM Principal Diagnosis Code
- Last Known Well
- Reason For Not Initiating IV Thrombolytic
- Time Last Known Well

Risk Adjustment: No

Data Collection Approach: Retrospective data sources for required data elements include administrative data and medical records.

Data Accuracy: Variation may exist in the assignment of ICD-9-CM codes; therefore, coding practices may require evaluation to ensure consistency.
Measure Analysis Suggestions: None

Sampling: Yes, for additional information see the Population and Sampling Specifications section.

Data Reported As: Aggregate rate generated from count data reported as a proportion

Selected References:
- Antithrombotic and Thrombolytic Therapy for Ischemic Stroke The Seventh ACCP Conference on Antithrombotic and Thrombolytic Therapy. Gregory W. Albers, MD, Chair; Pierre Amarenco, MD; J. Donald Easton, MD; Ralph L. Sacco, MD; and Philip Teal, MD (CHEST 2004; 126:483S–512S)
- Diagnosis and Initial Treatment of Ischemic Stroke, Institute for Clinical Systems Improvement (ICSI), 2001.

Conditions Making the Administration of IV Thrombolytic Therapy Inadvisable

Contraindications:
- CT findings of intracranial hemorrhage, subarachnoid hemorrhage, or major infarct signs
- History of intracranial hemorrhage, brain aneurysm, vascular malformation, or brain tumor
- Internal bleeding (less than 22 days)
- IV or IA t-PA given at a transferring hospital
- No IV access
- Patient/family refusal
- Platelets less than 100,000, PTT greater than 40 sec after heparin use
- PT greater than 15 or INR greater than 1.7, or unknown bleeding diathesis
- Recent intracranial or spinal surgery, head trauma, or stroke (less than 3 months)
- Recent surgery/trauma (less than 15 days)
- Seizure at onset
- Suspicion of subarachnoid hemorrhage
- Systolic blood pressure greater than 185 or diastolic blood pressure greater than 110 mm hg.
- Unable to determine eligibility

Warnings/Conditions that might lead to increased risk of bleeding or unfavorable outcomes:
- Acute pericarditis
- Advanced age
- Diabetic hemorrhagic retinopathy or other ophthalmic bleeding
- Glucose less than 50 or greater than 400 mg/dl
- Hemostatic defects including those secondary to severe renal or hepatic disease
- Left heart thrombus
- Life expectancy less than 1 year or severe co-morbid illness
- Patient currently receiving oral anticoagulants (e.g. Warfarin sodium, Coumadin)
- Pregnancy
- Rapid improvement
- Septic thrombophlebitis or occluded AV cannula at seriously infected site
- Stroke severity – Too mild
- Stroke severity – Too severe (e.g., NIHSS greater than 22)
- Subacute bacterial endocarditis
STK - 4: Thrombolytic Therapy

**Numerator:** Acute ischemic stroke patients for whom IV thrombolytic therapy was initiated at this hospital within 3 hours (≤ 180 minutes) of time last known well.

**Denominator:** Acute ischemic stroke patients whose time of arrival is within 2 hours (≤ 120 minutes) of time last known well.

![Diagram](image-url)
**Specifications Manual for National Hospital Inpatient Quality Measures**

**Discharges 04-01-10 (2Q10) through 09-30-10 (3Q10)**

**STK-4-7**
Measure Set: Stroke (STK)

Set Measure ID #: STK-5

Performance Measure Name: Antithrombotic Therapy By End of Hospital Day 2

Description: Ischemic stroke patients administered antithrombotic therapy by the end of hospital day 2.

Rationale: The effectiveness of antithrombotic agents in reducing stroke mortality, stroke-related morbidity and recurrence rates has been studied in several large clinical trials. While the use of these agents for patients with acute ischemic stroke and transient ischemic attacks continues to be the subject of study, substantial evidence is available from completed studies. Data at this time suggest that antithrombotic therapy should be administered within 2 days of symptom onset in acute ischemic stroke patients to reduce stroke mortality and morbidity as long as no contraindications exist.

Anticoagulants at doses to prevent venous thromboembolism are insufficient antithrombotic therapy to prevent recurrent ischemic stroke or TIA.

Type of Measure: Process

Improvement Noted As: An increase in rate

Numerator Statement: Ischemic stroke patients who had antithrombotic therapy administered by end of hospital day 2

Included Populations: Not applicable

Excluded Populations: None

Data Elements:
Antithrombotic Therapy Administered by End of Hospital Day 2

Denominator Statement: Ischemic stroke patients
Included Populations:
Discharges with an *ICD-9-CM Principal Diagnosis Code* for ischemic stroke as defined in Appendix A, Table 8.1

Excluded Populations:
- Patients less than 18 years of age
- Patients who have a Length of Stay less than 2 days
- Patients who have a Length of Stay greater than 120 days
- Patients with *Comfort Measures Only* documented on day of or day after arrival
- Patients enrolled in clinical trials
- Patients admitted for *Elective Carotid Intervention*
- Patients discharged prior to the end of hospital day 2
- Patients with *IV OR IA Thrombolytic (t-PA) Therapy Administered at This Hospital or Within 24 Hours Prior to Arrival*
- Patients with a documented *Reason For Not Administering Antithrombotic Therapy By End Of Hospital Day 2*

Data Elements:
- *Admission Date*
- *Arrival Date*
- *Birthdate*
- *Clinical Trial*
- *Comfort Measures Only*
- *Discharge Date*
- *Elective Carotid Intervention*
- *ICD-9-CM Principal Diagnosis Code*
- *IV OR IA Thrombolytic (t-PA) Therapy Administered at This Hospital or Within 24 Hours Prior to Arrival*
- *Reason For Not Administering Antithrombotic Therapy By End Of Hospital Day 2*

Risk Adjustment: No

Data Collection Approach: Retrospective data sources for required data elements include administrative data and medical records.

Data Accuracy: Variation may exist in the assignment of ICD-9-CM codes; therefore, coding practices may require evaluation to ensure consistency.

Measure Analysis Suggestions: None

Sampling: Yes, for additional information see the Population and Sampling Specifications section.
Data Reported As: Aggregate rate generated from count data reported as a proportion

Selected References:


- Guideline on the Use of Aspirin as Secondary Prophylaxis for Vascular Disease in Primary Care, Centre for Health Services Research University of Newcastle upon Tyne, & Centre for Health Economics of York, 1998.

STK - 5: Antithrombotic Therapy By End of Hospital Day 2

**Numerator:** Ischemic stroke patients who had antithrombotic therapy administered by end of hospital day 2.

**Denominator:** Ischemic stroke patients.

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**Variable Key:**

- **Duration of Stay**

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**Specifications Manual for National Hospital Inpatient Quality Measures**

Discharges **04-01-10 (2Q10) through 09-30-10 (3Q10)**

STK-5-4
Specifications Manual for National Hospital Inpatient Quality Measures
Discharges 04-01-10 (2Q10) through 09-30-10 (3Q10)
Measure Information Form
Collected For: The Joint Commission Only
CMS Informational Only

Measure Set: Stroke (STK)

Set Measure ID #: STK-6

Performance Measure Name: Discharged on Statin Medication

Description: Ischemic stroke 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.

Rationale: An elevated serum lipid level has been a well-documented risk factor for coronary artery disease (CAD) and reflects an organ-specific manifestation of atherosclerosis which is a disease process that can affect the heart and the major and minor branches of the arterial tree. The reduction of LDL cholesterol, through lifestyle modification and drug therapy when appropriate, is recommended for the prevention of myocardial infarction and other major vascular events for patients with CAD (or coronary risk equivalent conditions) according to the National Cholesterol Education Program’s Adult Treatment Panel III (NCEP ATP III) Guidelines. Recently, there has been an increased focus on the detection of patients with these risk factors when they present with other manifestations of atherosclerosis, and assuring that these patients are treated with lipid lowering medication if they meet NCEP ATPIII guidelines. While symptomatic carotid artery disease is one of the recognized coronary disease risk equivalents that qualify patients for treatment under ATPIII, there was little data until recently about the role of lipid lowering to prevent recurrent stroke or major vascular events in patients who presented with atherosclerotic stroke but did not otherwise qualify for treatment under ATPIII. The Stroke Prevention by Aggressive Reduction in Cholesterol Levels (SPARCL) study examined the effects of statins to lower LDL cholesterol in patients with stroke or TIA of atherosclerotic origin who had no other reason for taking lipid lowering therapy (i.e., they were without prior CAD or risk equivalent conditions), and had a fasting LDL greater than or equal to 100 mg/dL. The trial convincingly demonstrated that intensive lipid lowering therapy using statin medication was associated with a dramatic reduction in the rate of recurrent ischemic stroke and major coronary events. The treatment was well tolerated and cost effective. As a result, intensive lipid lowering therapy through use of a statin medication is now recommended for all patients with stroke or TIA of atherosclerotic origin who have an LDL greater than or equal to 100 mg/dL (or with LDL less than 100 mg/dL due to being on lipid lowering therapy prior to admission).
Based on these guidelines, all patients with ischemic stroke or TIA should have lipid profile measurement performed within 48 hours of admission unless results are available from within the past 30 days. A large body of evidence suggests that non-fasting lipid levels drawn in the first 48 hours after a major vascular event are reliable predictors of baseline lipid profiles, but after that time they may become unreliable. It is recommended that all patients with ischemic stroke or TIA with coronary heart disease or symptomatic atherosclerotic disease who have an LDL greater than or equal to 100 mg/dL (or with LDL less than 100 mg/dL due to being on lipid lowering therapy prior to admission) should be treated with a statin. The target goal for cholesterol lowering is an LDL-c level of less than 100 mg/dL. An LDL-c less than 70 mg/dL is recommended for very high-risk persons with multiple risk factors. For patients with stroke of atherosclerotic origin, intensive lipid lowering therapy with statins should be initiated in those who have an LDL greater than or equal to 100 mg/dL (or with LDL less than 100 mg/dL due to being on lipid lowering therapy prior to admission).

**Type of Measure:** Process

**Improvement Noted As:** An increase in rate

**Numerator Statement:** Ischemic stroke patients prescribed statin medication at hospital discharge

- **Included Populations:** Not applicable
- **Excluded Populations:** None
- **Data Elements:**
  - Statin Medication Prescribed at Discharge

**Denominator Statement:** Ischemic stroke patients with an 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

- **Included Populations:**
  - Discharges with an *ICD-9-CM Principal Diagnosis Code* for ischemic stroke as defined in Appendix A, Table 8.1
  - Patients who were on a lipid-lowering medication prior to hospital arrival as defined in Appendix C, Table 1.6
  - Patients with LDL-c not measured
  - Patients with *LDL-c Greater Than or Equal to 100 mg/dL*

- **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
• Patients without Evidence of Atherosclerosis
• Patients discharged/transferred to another hospital for inpatient care
• Patients who left against medical advice or discontinued care
• Patients who expired
• Patients discharged/transferred to a federal health care facility
• Patients discharged/transferred to hospice
• Patients with a Reason For Not Prescribing Statin Medication at Discharge

Data Elements:
• Admission Date
• Birthdate
• Clinical Trial
• Comfort Measures Only
• Discharge Date
• Discharge Status
• Elective Carotid Intervention
• Evidence of Atherosclerosis
• ICD-9-CM Principal Diagnosis Code
• LDL-c Greater Than or Equal to 100 mg/dL
• LDL-c Measured Within the First 48 Hours or 30 Days Prior to Hospital Arrival
• Pre-Arrival Lipid-Lowering Agent
• Reason For Not Prescribing Statin Medication at Discharge

Risk Adjustment: No

Data Collection Approach: Retrospective data sources for required data elements include administrative data and medical records.

Data Accuracy: Variation may exist in the assignment of ICD-9-CM codes; therefore, coding practices may require evaluation to ensure consistency.

Measure Analysis Suggestions: None

Sampling: Yes, for additional information see the Population and Sampling Specifications section.

Data Reported As: Aggregate rate generated from count data reported as a proportion

Selected References:


STK - 6: Discharged on Statin Medication

**Numerator:** Ischemic stroke patients prescribed statin medication at hospital discharge

**Denominator:** Ischemic stroke patients with an LDL $\geq 100$ mg/dL, OR LDL not measured, OR who were on a lipid-lowering medication prior to hospital arrival

START

Run cases that are included in the Stroke In-hospital Population and pass the edits defined in the Data Processing Flow through this measure

1. D40CM Principal Diagnosis Code
2. Not on Table R1

On Table R1

Discharge Status

- 02, 07, 30, 43, 50, 51, 66
- 01, 03, 04, 05, 06, 35, 01, 02, 03, 04, 05, 70

STK-6

Missing Comfort Measures Only

- 1, 2, 3

STK-6

Missing Clinical Trial

- Y

STK-6

Missing Elective Corrected Intervention

- N

STK-6

Missing Evidence of In-hospital Use

- Y
NQF ENDORSED VOLUNTARY CONSENSUS STANDARDS FOR HOSPITAL CARE

Measure Information Form
Collected For: The Joint Commission Only
CMS Informational Only

Measure Set: Stroke (STK)

Set Measure ID #: STK-8

Performance Measure Name: Stroke Education

Description: Ischemic or hemorrhagic stroke patients or their caregivers who were given educational materials during the hospital stay addressing all of the following: activation of emergency medical system, need for follow-up after discharge, medications prescribed at discharge, risk factors for stroke, and warning signs and symptoms of stroke.

Rationale: There are many examples of how patient education programs for specific chronic conditions have increased healthful behaviors, improved health status, and/or decreased health care costs of their participants. Clinical practice guidelines include recommendations for patient and family education during hospitalization as well as information about resources for social support services. Some clinical trials have shown measurable benefits in patient and caregiver outcomes with the application of education and support strategies. The type of stroke experienced and the resulting outcomes will play a large role in determining not only the course of treatment but also what education will be required. Patient education should include information about the event (e.g., cause, treatment, and risk factors), the role of various medications or strategies, as well as desirable lifestyle modifications to reduce risk or improve outcomes. Family/caregivers will also need guidance in planning effective and realistic care strategies appropriate to the patient’s prognosis and potential for rehabilitation.

Type of Measure: Process

Improvement Noted As: An increase in rate

Numerator Statement: Ischemic or hemorrhagic stroke patients with documentation that they or their caregivers were given educational material addressing all of the following:

1. Activation of emergency medical system
2. Follow-up after discharge
3. Medications prescribed at discharge
4. Risk factors for stroke
5. Warning signs and symptoms of stroke
Included Populations: Not applicable

Excluded Populations: None

Data Elements:
- *Education Addresses Activation of Emergency Medical System*
- *Education Addresses Follow-up After Discharge*
- *Education Addresses Medications Prescribed at Discharge*
- *Education Addresses Risk Factors for Stroke*
- *Education Addresses Warning Signs and Symptoms of Stroke*

Denominator Statement: Ischemic stroke or hemorrhagic stroke patients discharged home

Included Populations:
- Discharges with an *ICD-9-CM Principal Diagnosis Code* for ischemic or hemorrhagic stroke as defined in Appendix A, Table 8.1 or Table 8.2.
- A discharge to home or home care, or discharge/transfer to court/law enforcement

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*

Data Elements:
- *Admission Date*
- *Birthdate*
- *Clinical Trial*
- *Comfort Measures Only*
- *Discharge Date*
- *Discharge Status*
- *Elective Carotid Intervention*
- *ICD-9-CM Principal Diagnosis Code*

Risk Adjustment: No

Data Collection Approach: Retrospective data sources for required data elements include administrative data and medical records.

Data Accuracy: Variation may exist in the assignment of ICD-9-CM codes; therefore, coding practices may require evaluation to ensure consistency.
Measure Analysis Suggestions: None

Sampling: Yes, for additional information see the Population and Sampling Specifications section.

Data Reported As: Aggregate rate generated from count data reported as a proportion

Selected References:
- Post Stroke Rehabilitation, Clinical Practice Guideline No.16, Agency for Health Care Policy and Research (now known as Agency for Healthcare Research and Quality), 1995.
**STK - 8: Stroke Education**

**Numerator:** Ischemic or hemorrhagic stroke patients with documentation that they or their caregivers were given educational material addressing **all** of the following:
1. Activation of emergency medical system
2. Follow-up after discharge
3. Medications prescribed at discharge
4. Risk factors for stroke
5. Warning signs and symptoms of stroke

**Denominator:** Ischemic stroke or hemorrhagic stroke patients discharged home

---

**Variable Key:**
- Missing Counter
- Education Counter

---

### Diagram Description

```
START

Run cases that are included in the Stroke Initial Patient Population and pass the edits defined in the Data Processing Flow through this measure.

Discharge Status

= 02, 03, 04, 05, 07, 20, 43, 50, 51, 61, 62, 63, 64, 65, 66, 70

STK-8 B

STK-8 H

STK-8 B

STK-8 B

STK-8 B

STK-8 B

STK-8 B

STK-8 B

Initialize Missing Counter = 0
Initialize Education Counter = 0

Add 1 to Missing Counter
Add 1 to Education Counter

STK-8 H

STK-8 H

STK-8 H

STK-8 H
```
Measure Information Form
Collected For: The Joint Commission Only
CMS Informational Only

Measure Set: Stroke (STK)
Set Measure ID #: STK-10

Performance Measure Name: Assessed for Rehabilitation

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

Rationale: Each year about 700,000 people experience a new or recurrent stroke, which is the nation's third leading cause of death. Approximately two thirds of these individuals survive and require rehabilitation. Stroke is a leading cause of serious, long-term disability in the United States, with about 4.4 million stroke survivors alive today. Forty percent of stroke patients are left with moderate functional impairment and 15 to 30 percent with severe disability. More than 60% of those who have experienced stroke, serious injury, or a disabling disease have never received rehabilitation. Stroke rehabilitation should begin as soon as the diagnosis of stroke is established and life-threatening problems are under control. Among the high priorities for stroke are to mobilize the patient and encourage resumption of self-care activities as soon as possible. A considerable body of evidence indicates better clinical outcomes when patients with stroke are treated in a setting that provides coordinated, multidisciplinary 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.

Type of Measure: Process

Improvement Noted As: An increase in rate

Numerator Statement: Ischemic or hemorrhagic stroke patients assessed for or who received rehabilitation services

Included Populations: Not applicable

Excluded Populations: None
Data Elements:  
Assessed for Rehabilitation Services

Denominator Statement: Ischemic or hemorrhagic stroke patients

Included Populations:  
Discharges with an ICD-9-CM Principal Diagnosis Code for ischemic or hemorrhagic stroke as defined in Appendix A, Table 8.1 or Table 8.2.

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  
- Patients discharged/transfered to another hospital for inpatient care  
- Patients who left against medical advice or discontinued care  
- Patients who expired  
- Patients discharged/transfered to a federal health care facility  
- Patients discharged/transfered to hospice

Data Elements:  
- Admission Date  
- Birthdate  
- Clinical Trial  
- Comfort Measures Only  
- Discharge Date  
- Discharge Status  
- Elective Carotid Intervention  
- ICD-9-CM Principal Diagnosis Code

Risk Adjustment: No

Data Collection Approach: Retrospective data sources for required data elements include administrative data and medical records.

Data Accuracy: Variation may exist in the assignment of ICD-9-CM codes; therefore, coding practices may require evaluation to ensure consistency.

Measure Analysis Suggestions: None

Sampling: Yes, for additional information see the Population and Sampling Specifications section.

Data Reported As: Aggregate rate generated from count data reported as a proportion
Selected References:

- Post Stroke Rehabilitation, Clinical Practice Guideline No.16, Agency for Health Care Policy and Research (now known as Agency for Healthcare Research and Quality), 1995.
**STK - 10: Assessed for Rehabilitation**

**Numerator:** Ischemic or hemorrhagic stroke patients assessed for or who received rehabilitation services.

**Denominator:** Ischemic or hemorrhagic stroke patients.

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**Specifications Manual for National Hospital Inpatient Quality Measures**

Discharges **04-01-10 (2Q10) through 09-30-10 (3Q10)**