Stroke (STK)

Set Measures

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

General Data Elements

<table>
<thead>
<tr>
<th>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, Not collected for HBIPS-2 and HBIPS-3</td>
</tr>
<tr>
<td>Health Care Organization Identifier</td>
<td>All Records, Patient Population Data File, Hospital Clinical Data File,</td>
</tr>
<tr>
<td>Hispanic Ethnicity</td>
<td>All Records,</td>
</tr>
<tr>
<td>ICD-10-CM Other Diagnosis Codes</td>
<td>All Records, Optional for HBIPS-2, HBIPS-3</td>
</tr>
<tr>
<td>ICD-10-CM Principal Diagnosis Code</td>
<td>All Records, Optional for HBIPS-2, HBIPS-3</td>
</tr>
<tr>
<td>ICD-10-PCS Other Procedure Codes</td>
<td>All Records, Optional for All HBIPS Records</td>
</tr>
<tr>
<td>ICD-10-PCS Other Procedure Dates</td>
<td>All Records, Optional for All HBIPS Records</td>
</tr>
<tr>
<td>ICD-10-PCS Principal Procedure Code</td>
<td>All Records, Optional for All HBIPS Records</td>
</tr>
<tr>
<td>Element Name</td>
<td>Collected For</td>
</tr>
<tr>
<td>-------------------------------------------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>ICD-10-PCS Principal Procedure Date</td>
<td>All Records, Optional for All HBIPS Records</td>
</tr>
<tr>
<td>Payment Source</td>
<td>All Records, Optional for HBIPS-2 and HBIPS-3</td>
</tr>
<tr>
<td>Race</td>
<td>All Records,</td>
</tr>
<tr>
<td>Sex</td>
<td>All Records,</td>
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</table>

**Measure Set Specific Data Elements**

<table>
<thead>
<tr>
<th>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>STK,</td>
</tr>
<tr>
<td>Comfort Measures Only</td>
<td>STK-1, STK-10, STK-2, STK-3, STK-5, STK-6, STK-8,</td>
</tr>
<tr>
<td>Date Last Known Well</td>
<td>STK-4,</td>
</tr>
<tr>
<td>Discharge Disposition</td>
<td>STK-10, STK-2, STK-3, STK-6, STK-8,</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 Medication 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>Element Name</td>
<td>Collected For</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Elective Carotid Intervention</td>
<td>STK,</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>Reason for Extending the initiation of IV Thrombolytic</td>
<td>STK-4,</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>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>Reason for Oral Factor Xa Inhibitor</td>
<td>STK-1,</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>

**Related Materials**

<table>
<thead>
<tr>
<th>Document Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acknowledgment and Conditions of Use</td>
</tr>
<tr>
<td>Appendix A - ICD-10 Code Tables</td>
</tr>
<tr>
<td>Appendix C - Medication Tables</td>
</tr>
</tbody>
</table>
Stroke (STK) Initial Patient Population

The STK measure set is unique in that there are two distinct Initial Patient Populations (or sub-populations) within the measure set, each identified by a specific group of diagnosis codes, or lack thereof. The patients in each sub-population are counted in the Initial Patient Population of multiple measures. Hospitals utilizing STK for Joint Commission certification purposes will be required to use both the Ischemic and Hemorrhagic sub-populations.

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

- ICD-10-CM Principal Diagnosis Code
- Admission Date
- Birthdate
- Discharge Date

The following is the STK Initial Patient Population's measure breakdown:
<table>
<thead>
<tr>
<th>Measures</th>
<th>Initial Patient Population definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>STK2, 3, 4, 5, and 6</td>
<td>The count of all patients in sub-population 1</td>
</tr>
<tr>
<td>STK-1, 8, and 10</td>
<td>The count of all patients in sub-population 1 and 2</td>
</tr>
</tbody>
</table>

STK-1, 2, 3, 4, 5, 6, 8 and 10 are used for TJC Certification program.

Patients admitted to the hospital for inpatient acute care are included in one of the STK ICD sub-populations and are eligible to be sampled if they have:

1 – Ischemic sub-population – Patients with an ICD-10-CM Principal Diagnosis Code for ischemic stroke as defined in Appendix A, Table 8.1, 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.

2 – Hemorrhagic sub-population – Patients with an ICD-10-CM Principal Diagnosis Code for hemorrhagic stroke as defined in Appendix A, 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.

NOTE: For Joint Commission certification purposes, hospitals will be abstracting and submitting data on all measures in the STK set; therefore, both sub-population 1 (Ischemic patients) and 2 (Hemorrhagic patients) will be identified by the STK Initial Patient Population to be eligible for sampling.
Discharges 01-01-17 (1Q17) through 06-30-17 (2Q17)

Start STK Initial Patient Population
logic sub-routine as of 1/1/2016 discharges

Process all cases that have successfully reached the point
in the Transmission Data Processing Flow: Clinical which calls this Initial Patient
Population Algorithm. Do not process cases that have been rejected before this point
in the Transmission Data Processing Flow: Clinical.

Patient Age (in years) - Admission Date - Birthdate
Use the month and day portion of admission date and birthdate
to yield the most accurate age.

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

Length of stay > 120 days

ICD-10-CM
Principal Diagnosis Code

On Table 8.1

Not on Table 8.1

ICD-10-CM
Principal Diagnosis Code

On Table 8.2

Not on Table 8.2

Patient not in any STK sub-population

Patient is not eligible to be sampled for any STK sub-
population

Set Initial Patient PopulationReject Case Flag = "Yes"

Return to Transmission
Data Processing Flow: Clinical
(Data Transmission section)

Patient is in the 1st STK sub-population (Ischemic STK)

Patient is eligible to be sampled for the 1st STK sub-
population (Ischemic STK)

Patient is in the 2nd STK sub-population (Hemorrhagic STK)

Patient is eligible to be in the
2nd STK sub-population
(Hemorrhagic STK)

Set Initial Patient Population
Reject Case Flag = "No"

Include patient in the Initial Patient Population of the
appropriate measures
Stroke (STK) Initial Patient Population Algorithm Narrative

**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 Transmission Data Processing Flow: Clinical which calls this Initial Patient Population Algorithm. Do not process cases that have been rejected before this point in the Transmission Data Processing Flow: Clinical.

2. 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.

3. 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 Transmission Data Processing Flow: Clinical 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.

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

5. 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 Transmission Data Processing Flow: Clinical in the Data Transmission section.
   b. If the Length of Stay is less than or equal to 120 days, continue processing and proceed to ICD-10-CM Principal Diagnosis Code Check.

6. Check ICD-10-CM Principal Diagnosis Code
   a. If the ICD-10-CM Principal Diagnosis Code is on Table 8.1, the patient is in the first Ischemic Stroke sub-population and is eligible to be sampled for the first STK sub-population. Set the Initial Patient Population Reject Case Flag to equal No. Include the patient in the Initial Patient Population for the appropriate measures. Return to Transmission Data Processing Flow: Clinical in the Data Transmission section.
   b. For Joint Commission Only, if submitting data for STK Certification Program: If the ICD-10-CM Principal Diagnosis Code is on Table 8.2, the patient is in the second Hemorrhagic Stroke sub-population and is eligible to be sampled for the second STK sub-population. Set the Initial Patient Population Reject Case Flag to equal No. Include the patient in the Initial Patient Population for the appropriate measures. Return to Transmission Data Processing Flow: Clinical 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/month for the sub-population cannot sample that sub-population. Hospitals utilizing this measure set
with the Joint Commission for certification purposes and have five or fewer discharges for the two combined STK sub-populations (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

A modified sampling procedure is required for hospitals performing quarterly sampling for STK. The measure set contains two independent sub-populations: Ischemic STK patients and Hemorrhagic STK patients. The two sub-populations must be sampled independently from each other.

Joint Commission certification purposes: To determine if a hospital may choose to not submit STK patient level data, the count of the discharges, for the quarter, for the two sub-populations must be five or less (i.e., the combined count of discharges equals the count of all patients in the Ischemic Patient Sub-population [1] plus the count of all patients in the Hemorrhagic Patient Sub-population [2].

1. Hospitals selecting sample cases for the Ischemic sub-population must ensure that its Initial Patient Population and sample size for the Ischemic sub-population meets the following conditions:

   Quarterly Sample Size
   Based on Initial Patient Population Size
   for Ischemic Patient Sub-Population
   Hospital’s Measure

<table>
<thead>
<tr>
<th>Average Quarterly Initial Patient Population N</th>
<th>Minimum Required Sample Size n</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 900</td>
<td>180</td>
</tr>
<tr>
<td>225-899</td>
<td>20% of the Initial Patient Population</td>
</tr>
<tr>
<td>45-225</td>
<td>45</td>
</tr>
<tr>
<td>6 - 44</td>
<td>No sampling; 100% of the Initial Patient Population is required</td>
</tr>
<tr>
<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>

2. Hospitals submitting STK data for Joint Commission certification purposes will select sample cases for the Hemorrhagic sub-population, ensuring that its Initial Patient Population and sample size for the Hemor-
rhagic sub-population meets the following conditions:

Quarterly Sample Size
Based on Initial Patient Population Size
for Hemorrhagic Patient Sub-Population
Hospital's Measure

<table>
<thead>
<tr>
<th>Average Quarterly Initial Patient Population N</th>
<th>Minimum Required Sample Size n</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 900</td>
<td>180</td>
</tr>
<tr>
<td>226-899</td>
<td>20% of the Initial Patient Population</td>
</tr>
<tr>
<td>45-225</td>
<td>45</td>
</tr>
<tr>
<td>6 - 44</td>
<td>No sampling; 100% of the Initial Patient Population is required</td>
</tr>
<tr>
<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 A modified sampling procedure is required for hospitals performing monthly sampling for STK. The measure set contains two independent sub-populations: Ischemic STK patients and Hemorrhagic STK patients. The two sub-populations must be sampled independently from each other.

1. Hospitals selecting sample cases for the Ischemic sub-population must ensure that its Initial Patient Population and sample size for the Ischemic sub-population meets the following conditions:

Monthly Sample Size
Based on Initial Patient Population Size
for Ischemic Patient Sub-Population
Hospital's Measure

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

2. Hospitals submitting STK data for Joint Commission certification purposes will select sample cases for the Hemorrhagic sub-population, ensuring that its Initial Patient Population and sample size for the Hemorrhagic sub-population meets the following conditions:

Monthly Sample Size
Based on Initial Patient Population Size for Hemorrhagic Patient Sub-Population
Hospital's Measure

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

Sample Size Examples

Note: Hospitals utilizing STK for Joint Commission certification purposes must include all sampled STK sub-populations in the calculation of all STK measures. All of the STK measures’ specific exclusion criteria are used to filter out cases that do not belong in the measure denominator.

Quarterly sampling

- Quarterly sampling for the Ischemic sub-population:
  - A hospital's Ischemic sub-population is 392 during the first quarter. Using the quarterly sampling table for the Ischemic sub-population, the sample size required is 20% of this sub-population, or 79 cases for the quarter (twenty percent of 392 equals 78.4 rounded up to the next whole number equals 79).
  - A hospital's Ischemic sub-population is 100 during the first quarter. The required quarterly sample is 45 cases.
  - If the hospital chooses to submit patient level data: A hospital's Ischemic sub-population is 5 patients during the first quarter. Using the quarterly sampling table for the Ischemic sub-population, the sample size is less than the minimum required quarterly sample size, so 100% of this sub-population is sampled.

- Quarterly sampling for the Hemorrhagic sub-population for Joint Commission certification purposes:
  - A hospital's Hemorrhagic sub-population is 392 during the first quarter. Using the quarterly sampling table for the Hemorrhagic sub-population, the sample size required is 20% of this sub-population, or 79 cases for the quarter (twenty percent of 392 equals 78.4 rounded up to the next whole number equals 79).
  - A hospital's Hemorrhagic sub-population is 3 patients during the first quarter. Using the quarterly sampling table for the Hemorrhagic sub-population, the sample size is less than the minimum required quarterly sample size, so 100% of this sub-population is sampled.
  - A hospital's Hemorrhagic sub-population is 100 during the first quarter. The required quarterly sample is 45 cases.

- Quarterly sampling for the two combined populations for Joint Commission certification purposes.
  - The STK Initial Patient Population sizes for a hospital are 392 and 5 patients respectively per the sub-populations for the quarter. Since the total Initial Patient Population for STK is 397, the hospital must submit patient level data. The required quarterly sample sizes for each
sub-population would be 79 and 5.
- The Ischemic sub-population has 392 patients per quarter, which requires a 20% sample size, or 79 cases (twenty percent of 392 equals 78.4 rounded to the next highest whole number equals 79).
- The Hemorrhagic sub-population is less than the minimum required quarterly sample size, so 100% of this sub-population is sampled.
  - The STK Initial Patient Population sizes for a hospital are 1 and 3 patients respectively per the sub-populations for the quarter. Since the total Initial Patient Population for STK is 4, the hospital may choose to not submit patient level data. If the hospital chooses to submit patient level data:
    - The Joint Commission: the required quarterly sample size would be 100% of the patient population or 4 cases for the quarter.

**Monthly Sampling**

- Monthly sampling for the Ischemic sub-population:
  - A hospital’s Ischemic sub-population is 228 during March. Using the monthly sampling table for the Ischemic sub-population, the sample size required is 20% of this sub-population, or 46 cases for the quarter (twenty percent of 228 equals 45.6 rounded up to the next whole number equals 46).
  - A hospital’s Ischemic sub-population is 316 during January. The required quarterly sample is 60 cases.
  - A hospital’s Ischemic sub-population is 5 patients during February. Using the monthly sampling table for the Ischemic sub-population, the sample size is less than the minimum required monthly sample size, so 100% of this sub-population is sampled.

- Monthly sampling for the Hemorrhagic sub-population for Joint Commission certification purposes:
  - A hospital’s Hemorrhagic sub-population is 228 during March. Using the monthly sampling table for the Hemorrhagic sub-population, the sample size required is 20% of this sub-population, or 46 cases for the quarter (twenty percent of 228 equals 45.6 rounded up to the next whole number equals 46).
  - A hospital’s Hemorrhagic sub-population is 3 patients during January. Using the monthly sampling table for the Hemorrhagic sub-population, the sample size is less than the minimum required quarterly sample size, so 100% of this sub-population is sampled.
  - A hospital’s Hemorrhagic sub-population is 316 during February. The required monthly sample is 60 cases.
Measure Information Form

Measure Set: Stroke (STK)
Measure ID: STK-1
Name: Venous Thromboembolism (VTE Prophylaxis)
Description: Ischemic or 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: Increase in the 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
- Reason for Oral Factor Xa Inhibitor
- VTE Prophylaxis
- VTE Prophylaxis Date

Denominator Statement: Ischemic or hemorrhagic stroke patients

Included Populations: Discharges with an ICD-10-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 arrival
- Patients enrolled in clinical trials
- Patients admitted for Elective Carotid Intervention
Data Elements:
- Admission Date
Risk Adjustment: No.

Data Accuracy: Variation may exist in the assignment of ICD-10 codes; therefore, coding practices may require evaluation to ensure consistency.

Measure Analysis Suggestions: None

Sampling: Yes. Please refer to the measure set specific sampling requirements and 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:

- Guyatt, G. H., E. A. Akli, M. Crowther, D. D. Gutterman, H. J. Schuunemann, Therapy American College of


Vergouwen, M. D., Y. B. Roos, and P. W. Kamphuisen. "Venous Thromboembolism Prophylaxis and Treatment


**Measure Algorithm:**
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 day after hospital admission.

**Denominator:** Ischemic or hemorrhagic stroke patients
** NQF-ENDORSED VOLUNTARY CONSENSUS STANDARDS FOR HOSPITAL CARE **

Measure Information Form

**Measure Set:** Stroke (STK)

**Measure ID:** STK-10

**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:** Increase in the 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-10-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 to another hospital
- Patients who left against medical advice
- Patients who expired
- Patients discharged to home for hospice care
- Patients discharged to a health care facility for hospice care
Data Elements:

- Admission Date
- Birthdate
- Clinical Trial
- Discharge Date
- Discharge Disposition
- Elective Carotid Intervention
- ICD-10-CM Principal Diagnosis Code

Risk Adjustment: No.

Data Accuracy: Variation may exist in the assignment of ICD-10 codes; therefore, coding practices may require evaluation to ensure consistency.

Measure Analysis Suggestions: None

Sampling: Yes. Please refer to the measure set specific sampling requirements and 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:

- http://www.ebrsr.com/evidence-review/5-efficacy-stroke-rehabilitation
Arch Neurol 50, no. 1 (Jan 1993): 37-44.


**Measure Algorithm:**
**STK - 10: Assessed for Rehabilitation**

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

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

---

![Flowchart Diagram]
Measure Information Form

** Measure Set: Stroke (STK) **

** Measure ID: STK-2 **

** 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. In recent years, novel oral anticoagulants (NOACs) have been developed and approved by the U.S. Food and Drug Administration (FDA) for stroke prevention, and may be considered as an alternative to warfarin for select patients. Anticoagulation therapy 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: ** Increase in the 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.

** Included Populations: ** Discharges with an ICD-10-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 to another hospital
- Patients who left against medical advice
- Patients who expired
- Patients discharged to home for hospice care
Patients discharged to a health care facility for hospice care
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 Disposition
- Elective Carotid Intervention
- ICD-10-CM Principal Diagnosis Code
- Reason for Not Prescribing Antithrombotic Therapy at Discharge

Risk Adjustment: No.

Data Accuracy: Variation may exist in the assignment of ICD-10 codes; therefore, coding practices may require evaluation to ensure consistency.

Measure Analysis Suggestions: None

Sampling: Yes. Please refer to the measure set specific sampling requirements and 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:
- Centers for Disease Control and Prevention. "Prevalence and Most Common Causes of Disability among..."


Measure Algorithm:
STK-2: Discharged on Antithrombotic Therapy

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

**Denominator:** Ischemic stroke patients.

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

ICD-10-CM Principal Diagnosis Code
Not on Table 8.1

On Table 8.1

Discharge Disposition
= 2, 3, 4, 6, 7

= 1, 5, 0

Missing

Comfort Measures Only
= 4

Missing

Clinical Trial
= N

Missing

Elective Geriatri Intervention
= N

Missing

Antithrombotic Therapy Prescribed At Discharge
= N

Reason for Not Prescribing Antithrombotic Therapy at Discharge
= N

Case Will Be Rejected

In Measure Population

STK-2

Z

StK-2

Z

Stop

In Numerator Population

E

D

Not in Numerator Population

B
```
**NQF-ENDORSED VOLUNTARY CONSENSUS STANDARDS FOR HOSPITAL CARE**

Measure Information Form

**Measure Set:** Stroke (STK)

**Measure ID:** STK-3

**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. In recent years, novel oral anticoagulant agents (NOACs) have been developed and approved by the U.S. Food and Drug Administration (FDA) for stroke prevention, and may be considered as an alternative to warfarin for select patients. 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:** Increase in the rate

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

**Included Populations:** Not applicable

**Excluded Populations:** None

**Data Elements:**

- Anticoagulation Therapy Prescribed at Discharge

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

**Included Populations:**

- Discharges with an ICD-10-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 to another hospital
• Patients who left against medical advice
• Patients who expired
• Patients discharged to home for hospice care
• Patients discharged to a health care facility for hospice care
• 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 Disposition
• Elective Carotid Intervention
• ICD-10-CM Principal Diagnosis Code
• Reason for Not Prescribing Anticoagulation Therapy at Discharge

Risk Adjustment: No.

Data Accuracy: Variation may exist in the assignment of ICD-10 codes; therefore, coding practices may require evaluation to ensure consistency.

Measure Analysis Suggestions: None

Sampling: Yes. Please refer to the measure set specific sampling requirements and 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:


Measure Algorithm:
STK-3: Anticoagulation Therapy for Atrial Fibrillation/Flutter

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

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

START

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

ICD-10-CM Principal Diagnosis Code

On Table 8.1

Discharge Disposition

Missing = 2, 3, 4, 6, 7

Comfort Measured Only

Missing = 1, 5, 8

Clinical Trial

Missing = N

Elective Carotid Intervention

Missing = N

Atrial Fibrillation/Flutter

Missing = Y

Anticoagulation Therapy Prescribed at Discharge

Missing = Y

Case Will Be Rejected

Missing = N

Reasons For Not Prescribing Anticoagulation Therapy

Missing = Y

Not In Measure Population

In Measure Population

Stop

In Nominator Population

STK-3 Population

STK-3 Z
Measure Information Form

** Measure Set:** Stroke (STK)

** Measure ID:** STK-4

** 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 (FDA) 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. Physicians with experience and skill in stroke management and the interpretation of CT scans should supervise treatment.

The European Cooperative Acute Stroke Study (ECASS) III trial indicated that intravenous rtPA can be given safely to, and can improve outcomes for, carefully selected patients treated 3 to 4.5 hours after stroke; however, as the NINDS investigators concluded, the earlier that IV thrombolytic therapy is initiated, the better the patient outcome. Therefore, the target for IV t-PA initiation remains within 3 hours of time last known well. The administration of IV thrombolytic therapy beyond 3 hours of stroke symptom onset has not been FDA approved.

Although the benefit of t-PA has been well established, only a minority of patients with acute ischemic stroke actually receive this medication across the United States. Recent recommendations from the American Heart Association/American Stroke Association and FDA remove or make less specific many previous contraindications and warnings for therapy.

** Type Of Measure:** Process

** Improvement Noted As:** Increase in the 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
- IV Thrombolytic Initiation
- IV Thrombolytic Initiation Date
- IV Thrombolytic Initiation Time
- Time Last Known Well

** 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-10-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 Extending the Initiation of IV Thrombolytic
- 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-10-CM Principal Diagnosis Code
- Last Known Well
- Reason for Extending the Initiation of IV Thrombolytic
- Reason for Not Initiating IV Thrombolytic
- Time Last Known Well

Risk Adjustment: Yes.

Data Accuracy: Variation may exist in the assignment of ICD-10 codes; therefore, coding practices may require evaluation to ensure consistency.

Measure Analysis Suggestions: None

Sampling: Yes. Please refer to the measure set specific sampling requirements and 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:

for Ischemic Stroke: The Seventh Accp Conference on Antithrombotic and Thrombolytic Therapy." [In eng]. Chest 126, no. 3 Suppl (Sep 2004): 483S-512S.


- "Diagnosis and Initial Treatment of Ischemic Stroke." Institute for Clinical Systems Improvement (2001).


Measure Algorithm:
**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.
** Measure Information Form **

Measure Set: Stroke (STK)

Measure ID: STK-5

Name: Antithrombotic Therapy By End of Hospital Day Two

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.

Type Of Measure: Process

Improvement Noted As: Increase in the 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-10-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 Duration 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
Risk Adjustment: No.

Data Accuracy: Variation may exist in the assignment of ICD-10 codes; therefore, coding practices may require evaluation to ensure consistency.

Measure Analysis Suggestions: None

Sampling: Yes. Please refer to the measure set specific sampling requirements and 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:


Measure Algorithm:
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.

Variable Key:
- **Duration of Stay**

Diagram:
- **START**
- **ICD-10-CM Principal Diagnosis Code**
  - Not on Table 8.1 → STK5 B
  - On Table 8.1
    - **Comfort Measures Only**
      - = 1 → STK5 B
      - = 2, 3, 4
    - **Clinical Trial**
      - = Y → STK5 B
      - = N
    - **Elective Canaloplasty Intervention**
      - = Y → STK5 B
      - = N
    - **Arrival Date**
      - = UTD → STK5 D
      - Non-UTD
    - **Duration of Stay** (in days) = Discharge Date – Arrival Date
    - Duration of Stay
      - ≥ 0 and < 2 → STK5 B
      - ≥ 2

Discharges 01-01-17 (1Q17) through 06-30-17 (2Q17)
** NQF-ENDORSED VOLUNTARY CONSENSUS STANDARDS FOR HOSPITAL CARE **

Measure Information Form

**Measure Set:** Stroke (STK)

**Measure ID:** STK-6

**Name:** Discharged on Statin Medication

**Description:** Ischemic stroke patients who are prescribed statin medication at hospital discharge.

**Rationale:** 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), which includes individuals with ischemic stroke due to large artery atherosclerosis, individuals with ischemic stroke due to intrinsic small vessel disease, and individuals with ischemic stroke not directly due to atherosclerosis but with clinically evident atherosclerotic disease in an uninvolved cerebral or noncerebral bed. Both women and men with clinical ASCVD are at increased risk for recurrent ASCVD and ASCVD death. High-intensity statin therapy should be initiated or continued as first-line therapy in women and men less than or equal to 75 years of age who have clinical ASCVD, unless contraindicated. In patients with clinical ASCVD and a contraindication to high-intensity statin therapy, moderate-intensity therapy should be considered as an alternative if it can be tolerated. In individuals 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 (Stone, 2013).

**Type Of Measure:** Process

**Improvement Noted As:** Increase in the 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

**Included Populations:** Discharges with an ICD-10-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 to another hospital
- Patients who left against medical advice
- Patients who expired
- Patients discharged to home for hospice care
- Patients discharged to a health care facility for hospice care
- Patients with a Reason for Not Prescribing Statin Medication at Discharge
Data Elements:
- Admission Date
- Birthdate
- Clinical Trial
- Comfort Measures Only
- Discharge Date
- Discharge Disposition
- ICD-10-CM Principal Diagnosis Code
- Reason for Not Prescribing Statin Medication at Discharge

Risk Adjustment: No.

Data Accuracy: Variation may exist in the assignment of ICD-10 codes; therefore, coding practices may require evaluation to ensure consistency.

Measure Analysis Suggestions: None

Sampling: Yes. Please refer to the measure set specific sampling requirements and 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:
• Weiss, R., M. Harder, and J. Rowe. "The Relationship between Nonfasting and Fasting Lipid Measurements in Patients with or without Type 2 Diabetes Mellitus Receiving Treatment with 3-Hydroxy-3-Methylglutaryl-Coenzyme a Reductase Inhibitors." [In eng]. Clin Ther 25, no. 5 (May 2003): 1490-7.

Measure Algorithm:
**STK - 6: Discharged on Statin Medication**

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

**Denominator:** Ischemic stroke patients.

---

Start

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

1. **ICD-10-CM Principal Diagnostic Code**
   - Not on Table 8.1
   - STK6 B

2. On Table 8.1
   - Discharge Disposition
     - $= 2, 3, 4, 6, 7$
     - STK6 B
     - $= 1, 5, 8$

3. STK6 X
   - Discharge Disposition
     - Missing
     - STK6 B

4. STK6 X
   - Comfort Measures Only
     - Missing
     - STK6 B
     - $= 1, 2, 3$

5. STK6 X
   - Clinical Trial
     - Missing
     - STK6 B
     - $= Y$

6. STK6 X
   - Elective Cardiovascular Intervention
     - Missing
     - STK6 B
     - $= Y$

7. STK6 H
Measure Information Form

**Measure Set:** Stroke (STK)

**Measure ID:** STK-8

**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:** Increase in the 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 Medication 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-10-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, home care or 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
• Discharge Date
• Discharge Disposition
• Elective Carotid Intervention
• ICD-10-CM Principal Diagnosis Code

Risk Adjustment: No.

Data Accuracy: Variation may exist in the assignment of ICD-10 codes; therefore, coding practices may require evaluation to ensure consistency.

Measure Analysis Suggestions: None

Sampling: Yes. Please refer to the measure set specific sampling requirements and 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:


Measure Algorithm:
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.