Preface

All organizations seeking Joint Commission Disease-Specific Care (DSC) Certification Primary Stroke Center Certification must utilize a set of 10 standardized performance measures in order to meet the performance measurement requirements for certification. Detailed information on the Joint Commission’s DSC stroke measure set is available in this Disease-Specific Care Certification Program Stroke Performance Measurement Implementation Guide, 2nd Edition, Version 2.a. Effective January 1, 2009, Version 2.a measure specifications will replace those contained in the previous version.

The stroke measures were pilot tested by 30 certified organizations from October 1, 2004 through September 30, 2005. Following recommendations from the DSC Stroke Advisory Panel, efforts to harmonize data elements common to the stroke measure set, the American Stroke Association’s Get With The GuidelinesSM program, and the Paul Coverdell National Acute Stroke Registry sponsored by the Division of Heart Disease and Stroke Prevention, Centers for Disease Control and Prevention were initiated in May 2006. In January, 2008, a set of ten harmonized stroke measures were implemented.

Organizations seeking further information on the harmonized stroke measure set or the performance measurement requirements for DSC certification should e-mail DSC_Stroke@jointcommission.org
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Introduction and Background

The History of the Performance Measurement Initiative

In 1987, The Joint Commission (previously known as The Joint Commission on Accreditation of Healthcare Organizations) announced its *Agenda for Change*, which outlined a series of major steps designed to modernize the accreditation process. A key component of the *Agenda for Change* was the future incorporation of performance measurement into the accreditation process. As the performance measurement initiative evolved, the name ORYX® was chosen to represent the overall initiative. Beginning with the hospital and long term care accreditation programs, performance measurement requirements were phased in over several years. Initial requirements allowed organizations to select a performance measurement system from a Joint Commission approved list to collect aggregate health care data on individual performance measures. In March of 1999, the ORYX® initiative became operational when the performance measurement systems began transmitting data to The Joint Commission on behalf of accredited hospitals and long term care organizations. Since that time, home care and behavioral health organizations have been included in the ORYX® initiative.

The eventual development and inclusion of standardized core performance measures was a standing goal of the ORYX® initiative. The next phase of the ORYX® initiative focused on the identification of standardized sets of valid, reliable, and evidence-based “core” measures for use in the hospital accreditation program. In early 1999, The Joint Commission solicited input from a wide variety of stakeholders—clinical professionals, health care provider organizations, health care consumers, and performance measurement experts—about potential focus areas for core measures. The input of these stakeholders, together with recommendations from state hospital associations led to the identification of five initial core measurement areas:

- Acute myocardial infarction
- Heart Failure
- Community acquired pneumonia
- Pregnancy and related conditions (including newborn and maternal care)
- Surgical procedures and complications

A period of extensive work involving clinical input from expert panels, attributes and evaluation criteria for core performance measures developed with an Advisory Council on Performance Measurement and pilot testing with state hospital associations, measurement systems, and hospitals led to the final selection of hospital core measures. Implementation of data collection on the first sets of ORYX® core measures for hospitals began in July 2001.
Performance Measurement in Disease-Specific Care Certification

Since consensus-based nationally standardized performance measures do not currently exist for many disease states, The Joint Commission has initiated a two-stage process with respect to performance measurement expectations for certified programs. Stage I requires that certified programs collect and analyze data on at least four self-identified performance measures related to, or identified in, evidence-based guidelines. Stage II comprises the development by The Joint Commission of sets of standardized measures for selected disease states for implementation by certified programs. Once a standardized set is introduced, affected programs are required to replace current (Stage I) measures with the applicable standardized (Stage II) measures. For additional information on current requirements, review the Disease-Specific Care Certification at the Joint Commission web site (www.jointcommission.org).

A systematic process is used for identification of standardized measures. First, an expert panel is identified to assist in establishing a framework (see Chapter 2), the scope of the initial measure set, and to recommend the initial measures comprising the set. The framework is designed to identify delivery of care settings, key domains or aspects of care, and outcomes of care.

The expert panel discusses potential measurement opportunities within each focus area of the framework. In some cases, while a given measurement aspect is considered to be important, existing measures cannot be identified. Where existing measures are identified, the panel prioritizes them and requests additional information from measure developers to assist the panel in evaluating the measures for importance, scientific acceptability, usability/interpretability and feasibility.

After identification of a measure framework, a public call for measures is conducted. Following the call for measures and staff review of materials received, the panel evaluates and recommends a draft set of measures for stakeholder review and public comment. The results of these reviews and public comments are carefully considered and incorporated in measure specifications, which are then pilot tested before finalization of the standardized measure set.

Standardized Stroke Measures

In November 2003, The Joint Commission in collaboration with the American Heart Association / American Stroke Association (AHA/ASA) set out to develop performance measures for DSC Certification for Primary Stroke Centers, the first advanced-level certification program designed to recognize primary stroke centers that make exceptional efforts to foster better outcomes for stroke patient care. Unlike basic certification, the advanced program outlined additional clinically-specific
requirements and expectations based on the Brain Attack Coalition’s Recommendations for Primary Stroke Centers and guidelines developed by the AHA/ASA and equivalent evidence-based guidelines. These guidelines provided the foundation for the identification of areas for performance measurement and the development of detailed measure specifications. Specifications for a set of ten candidate stroke measures were ultimately drafted and recommended by the Joint Commission’s Stroke Advisory Panel in early 2004, followed by a 12-month pilot test (October 1, 2004 through September 30, 2005) to assess and quantify the data collection effort, evaluate the reliability of individual data elements, measure specifications, the measurement set, and identify potential measure modifications. A standardized set of ten measures for stroke patient care was finalized following the pilot test project, and data collection for four priority measures uniformly adopted by all currently certified Primary Stroke Centers, as well as programs seeking initial DSC Certification from The Joint Commission.

The pilot test project also revealed that several pilot site programs were currently participating in the American Stroke Association’s Get With The Guidelines\textsuperscript{SM} (GWTG)-Stroke program / patient management tool and/or the Paul Coverdell National Acute Stroke Registry sponsored by the Division of Heart Disease and Stroke Prevention, Centers for Disease Control and Prevention (CDC). Efforts to harmonize the data elements of all three measure sets were initiated in May 2006. The Stroke Performance Measure Consensus Group, comprising representatives from The Joint Commission, AHA/ASA and CDC, was established and began to identify commonalities across the three performance measurement methodologies, and to align data element definitions and guidelines for abstraction. As a result, the ten measures included in this revised implementation guide have been harmonized with the GWTG-Stroke and Coverdell measure specifications for use in all services or programs.

**Stroke**

Among adults age 20 and older, the prevalence of stroke in 2004 was an estimated 5,700,000. Each year about 700,000 people experience a new or recurrent stroke. The estimated direct and indirect cost of stroke for 2007 is $62.7 billion. With advances in diagnosis and treatment, the stroke death rate fell 20.4% from 1994-2004; however, when considered separately from other cardiovascular diseases, stroke remains the No. 3 cause of death in the United States and a leading cause of serious, long-term disability.

Once a stroke has occurred, all attempts should be made to decrease the time from symptom onset to stroke treatment. The underlying pathophysiology can be varied and it is important to confirm the cause of the patient’s impairment, i.e., ischemic stroke, intracranial hemorrhage, or other systemic or neurological illness. Therefore initial diagnosis is important for treatment and disease management.
Research has identified and clinical practice guidelines include recommended processes of care based on the best evidence and clinical opinion available at this time. The performance measures presented in this guide have been selected with reference to the process of care described in current clinical practice guidelines. As part of an ongoing quality improvement initiative within an organization, they can help assess the processes of care and quality of services for stroke patients within a certified DSC service or program.

References


STROKE FRAMEWORK

Introduction

The application of a systematic approach can be useful in identifying the varied factors that influence a disease process. The following framework was created as part of the identification and development of the performance measures included in this booklet. The framework served as a guide to selecting areas of performance measurement that will enhance the quality of patient care, are evidence based, and are scientifically sound. The framework has been designed to identify delivery of care settings for stroke, key domains or aspects of care, and outcomes of care. Specifically, it presents patient factors (e.g., co-morbidities, lifestyle), health care system characteristics, treatment modalities/interventions, and measurable outcomes.

The framework is included in this guide exactly as it was used during the process of identifying the related performance measures. While it is not meant to be exhaustive, it does provide a foundation for considering performance measurement in Disease-Specific Care (DSC) programs for stroke. As such, your organization may wish to use or enhance the framework to assess for additional opportunities for performance measurement within your quality improvement initiative. In addition, factors in the framework may be helpful when considering root causes (see section Data Analysis and Display) as your organization undertakes analysis and interpretation of data collected for the performance measures.
### STROKE STANDARDIZED MEASURE SET FRAMEWORK

<table>
<thead>
<tr>
<th>DOMAINS</th>
<th>KEY MEASUREMENT AREAS</th>
</tr>
</thead>
</table>
| **Urgent Care Assessment** | Stroke team  
| | Written care protocols  
| | Initial Physical Assessment & Neurological evaluation  
| | Ischemic vs. hemorrhagic stroke  
| | Vital signs  
| | Diagnostics  
| | Blood counts, coagulation, chemistry  
| | EKG  
| | Chest X-ray  
| | Vascular imaging  
| | Brain imaging |
| **Acute Care Hospitalization/Treatment** | Airway/ventilatory support  
| | Anticoagulation  
| | Rehab referral  
| | Anti-platelet therapy  
| | Anti-thrombotic therapy  
| | Avoidance of nifedipine  
| | DVT prophylaxis |
| **Risk Factor Modification** | Smoking  
| | Obesity  
| | Alcohol intake  
| | Heart disease  
| | Sedentary lifestyle/physical activity  
| | Diet |
| **Secondary Prevention** | Hypertension  
| | Medications  
| | Carotid artery disease  
| | Smoking cessation  
| | Diabetes  
| | High cholesterol  
| | History of TIA |
| **Education** | Causes of stroke  
| | Adherence to medication use  
| | Resources for social support or services  
| | Risk factor modification/healthy lifestyle  
| | Treatment of stroke  
| | Discharge preparation |
| **Rehabilitation** | Instrumental activities of daily living  
| | Multidisciplinary evaluations  
| | Speech therapy  
| | Dysphagia  
| | Speech and oral expression  
| | Aphasia  
| | Activities of daily living  
| | PT  
| | Vocational Therapy  
| | Sensory disturbances  
| | Bowel/bladder control  
| | OT  
| | Psychological evaluation |
### STROKE GUIDELINES

<table>
<thead>
<tr>
<th>Guideline Title &amp; Date of Release/Update</th>
<th>Developer</th>
<th>Focus/Application</th>
<th>Contact Information</th>
</tr>
</thead>
</table>
| ACC/AHA/ESC Guidelines for the Management of Patients with Atrial Fibrillation  
Release date: 2001  
Update: 2006 | American College of Cardiology  
American Heart Association  
European Society of Cardiology | Management of atrial fibrillation | American College of Cardiology  
Heart House  
9111 Old Georgetown Road  
Bethesda, MD 20814-1699  
800-253-4636, ext. 694 or (301) 897-5400  
American Heart Association  
7272 Greenville Ave.  
Dallas, TX 75231-4596  
800-242-8721  
http://www.americanheart.org  
European Society of Cardiology  
The European Heart House  
2035 Route des Colles  
B.P. 179 - Les Templiers  
FR-06903 Sophia Antipolis  
France  
Tel : +33.4.92.94.76.00 |
| AHA Scientific Statement - Preventing Ischemic Stroke in Patients with Prior Stroke and Transient Ischemic Attack.  
Release date: 1999  
Update: 2006 | American Heart Association | Stroke prevention. | American Heart Association  
7272 Greenville Ave.  
Dallas, TX 75231-4596  
800-242-8721  
http://www.americanheart.org |
| AHA Scientific Statement - Primary Prevention of Ischemic Stroke.  
Release date: 2001  
Update: 2006 | American Heart Association | Identification and modification of stroke risk factors. | American Heart Association  
7272 Greenville Ave.  
Dallas, TX 75231-4596  
800-242-8721  
http://www.americanheart.org |
<table>
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<th>Developer</th>
<th>Focus/Application</th>
<th>Contact Information</th>
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<tbody>
<tr>
<td>Antithrombotic Therapy Release date: 1999</td>
<td>Scottish Intercollegiate Guidelines Network (SIGN)</td>
<td>Antithrombotic Therapy</td>
<td>SIGN Secretariat Royal College of Physicians 9 Queen Street Edinburgh EH2 1JQ Tel. 0131-225 7324 Fax: 0131 225 1769 Email: <a href="mailto:sign@rcpe.ac.uk">sign@rcpe.ac.uk</a> <a href="http://www.show.scot.nhs.uk/sign/home.htm">www.show.scot.nhs.uk/sign/home.htm</a></td>
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<tr>
<td>Diagnosis and Initial Treatment of Ischemic Stroke Release date: 2001 Update: 2003</td>
<td>Institute of Clinical Systems Improvement (ICSI)</td>
<td>Ischemic stroke, transient ischemic attack (TIA)</td>
<td>Institute of Clinical Systems Improvement ICSI 8009 34th Avenue South Suite 1200 Bloomington, MN 55425 952-814-7060 <a href="http://www.icsi.org">www.icsi.org</a></td>
</tr>
<tr>
<td>Guideline on the Use of Aspirin as Secondary Prophylaxis for Vascular Disease in Primary Care. Release date: 1998.</td>
<td>Centre for Health Services Research University of Newcastle upon Tyne Centre for Health Economics University of York</td>
<td>The benefits of prophylactic use of aspirin in the secondary prophylaxis of vascular disease.</td>
<td>Centre for Health Services Research University of Newcastle upon Tyne 21 Claremont Place Newcastle upon Tyne NE2 4AA Tel: +44 (0)191 222 7045 Centre for Health Economics Alcuin 'A' Block University of York Heslington YORK, YO10 5DD UK Tel: (01904) 321401, Fax: (01904) 321402</td>
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<td>Guideline Title &amp; Date of Release/Update</td>
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<tr>
<td>Management of Patients with Stroke. Assessment, investigation, immediate management and secondary prevention. Release date: 1997</td>
<td>Scottish Intercollegiate Guidelines Network (SIGN).</td>
<td>Assessment, investigation, immediate management and secondary prevention of TIA or acute stroke (other than subarachnoid hemorrhage).</td>
<td>SIGN Secretariat Royal Colloq of Physicians 9 Queen Street Edinburgh EH2 1JQ Tel: 0131-225 7324 Fax: 0131 225 1769 Email: <a href="mailto:sign@rcpe.ac.uk">sign@rcpe.ac.uk</a> <a href="http://www.show.scot.nhs.uk/sign/home.htm">www.show.scot.nhs.uk/sign/home.htm</a></td>
</tr>
<tr>
<td>Management of Patients with Stroke. Identification and Management of Dysphagia Release date: 1997</td>
<td>Scottish Intercollegiate Guidelines Network (SIGN).</td>
<td>Dysphagia</td>
<td>SIGN Secretariat Royal Colloq of Physicians 9 Queen Street Edinburgh EH2 1JQ Tel: 0131-225 7324 Fax: 0131 225 1769 Email: <a href="mailto:sign@rcpe.ac.uk">sign@rcpe.ac.uk</a> <a href="http://www.show.scot.nhs.uk/sign/home.htm">www.show.scot.nhs.uk/sign/home.htm</a></td>
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<tr>
<td>Management of Patients with Stroke. Rehabilitation, Prevention, and Management of Complications, and</td>
<td>Scottish Intercollegiate Guidelines Network (SIGN).</td>
<td>General management, rehabilitation, prevention and management of complications, and</td>
<td>SIGN Secretariat&lt;br&gt;Royal Coll of Physicians&lt;br&gt;9 Queen Street&lt;br&gt;Edinburgh EH2 1JQ&lt;br&gt;Tel. 0131-225 7324&lt;br&gt;Fax: 0131 225 1769&lt;br&gt;Email: <a href="mailto:sign@rcpe.ac.uk">sign@rcpe.ac.uk</a>&lt;br&gt;www.show.scot.nhs.uk/sign/home.htm</td>
</tr>
<tr>
<td>Discharge Planning. Release date: 2002</td>
<td></td>
<td>discharge planning with an emphasis on the first 12 months after stroke.</td>
<td></td>
</tr>
<tr>
<td>Post-Stroke Rehabilitation Guideline No.16 Release date: 1995.</td>
<td>Agency for Healthcare Policy and Research (AHCPR) Now known as Agency for</td>
<td>Recovery from stroke.</td>
<td>Agency for Healthcare Research and Quality&lt;br&gt;540 Gaither Road&lt;br&gt;Rockville, MD 20850&lt;br&gt;301-427-1364&lt;br&gt;<a href="mailto:info@ahrq.gov">info@ahrq.gov</a></td>
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<tr>
<td></td>
<td>Healthcare Research and Quality (AHRQ)</td>
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<tr>
<td>Smoking Cessation Clinical Practice Guideline No. 18 Release date: 1996</td>
<td>Agency for Healthcare Policy and Research (AHCPR) Now known as Agency for</td>
<td>Effective, experimentally validated smoking cessation practices</td>
<td>Agency for Healthcare Research and Quality&lt;br&gt;540 Gaither Road&lt;br&gt;Rockville, MD 20850&lt;br&gt;301-427-1364&lt;br&gt;<a href="mailto:info@ahrq.gov">info@ahrq.gov</a></td>
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<tr>
<td></td>
<td>Healthcare Research and Quality (AHRQ)</td>
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<tr>
<td>STROKE the first hours Guidelines for Acute Treatment Release Date: 2000</td>
<td>National Stroke Association</td>
<td>Early treatment of stroke.</td>
<td>National Stroke Association&lt;br&gt;9707 East Easter Lane&lt;br&gt;Englewood, CO 80112-5115&lt;br&gt;303-649-9299</td>
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## STROKE

**DISEASE-SPECIFIC CARE STAGE II PERFORMANCE MEASURES**

<table>
<thead>
<tr>
<th>Set No.</th>
<th>Harmonized DSC Stroke Measure Name</th>
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<tbody>
<tr>
<td>STK-1</td>
<td>Deep Vein Thrombosis (DVT) Prophylaxis</td>
</tr>
<tr>
<td>STK-2</td>
<td>Discharged on Antithrombotic Therapy</td>
</tr>
<tr>
<td>STK-3</td>
<td>Patients with Atrial Fibrillation/Flutter Receiving Anticoagulation Therapy</td>
</tr>
<tr>
<td>STK-4</td>
<td>Thrombolytic Therapy Administered</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-7</td>
<td>Dysphagia Screening</td>
</tr>
<tr>
<td>STK-8</td>
<td>Stroke Education</td>
</tr>
<tr>
<td>STK-9</td>
<td>Smoking Cessation / Advice / Counseling</td>
</tr>
<tr>
<td>STK-10</td>
<td>Assessed for Rehabilitation</td>
</tr>
</tbody>
</table>

**Note:** * DSC Stroke Performance Measure Set following harmonization of measure specifications with the Paul Coverdell National Acute Stroke Registry and American Heart Association / American Stroke Association GET WITH THE GUIDELINES\textsuperscript{SM}.

** DSC certification for Primary Stroke Centers requires data collection for all 10 measures in the set.
GENERAL POPULATION IDENTIFICATION
DISEASE SPECIFIC MEASURES - STROKE

The identification of patients/participants for inclusion in the performance measures related to stroke begins with a core set of data elements. These variables must be collected to determine eligibility for inclusion in any of the measure populations as well as case identification for analysis purposes. The first data elements listed are for administrative purposes in the dataset.

**Case Identifier**

**Gender**

The data elements listed next define the general pool of patients/participants who are eligible for consideration in each of the stroke measure populations. A flowchart follows that depicts the evaluation process for inclusion in the general population.

**Diagnosis of Ischemic Stroke or Hemorrhagic Stroke (ICD-9-CM Principal Diagnosis Code)**

**Birth date (age 18 or older)**

**Treated at a Primary Stroke Center that is a certified Disease Specific Care (DSC) Program**

This measure set is applicable to patients with diagnoses of ischemic stroke and hemorrhagic stroke. Each measure includes patients from one or both categories. The ICD-9-CM Principal Diagnosis Code that is used to identify the measure population is provided in tables found in the appendices (See Table 1 & Table 2). The following table identifies the population included in each measure:

<table>
<thead>
<tr>
<th>No.</th>
<th>Measure</th>
<th>Ischemic</th>
<th>Hemorrhagic</th>
</tr>
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<tbody>
<tr>
<td>STK-1</td>
<td>Deep Vein Thrombosis (DVT) Prophylaxis</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>STK-2</td>
<td>Discharged on Antithrombotic Therapy</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>STK-3</td>
<td>Patients with Atrial Fibrillation/Flutter Receiving Anticoagulation Therapy</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>STK-4</td>
<td>Thrombolytic Therapy Administered</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>STK-5</td>
<td>Antithrombotic Therapy By End of Hospital Day Two</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>STK-6</td>
<td>Discharged on Statin Medication</td>
<td>X</td>
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<tr>
<td>STK-7</td>
<td>Dysphagia Screening</td>
<td>X</td>
<td>X</td>
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<td>STK-8</td>
<td>Stroke Education</td>
<td>X</td>
<td>X</td>
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<td>STK-9</td>
<td>Smoking Cessation / Advice / Counseling</td>
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<td>X</td>
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<tr>
<td>STK-10</td>
<td>Assessed for Rehabilitation</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
Principal dx of ischemic Stroke?

Yes

Age ≥ 18?

Yes

Admitted for elective carotid intervention?

No

No

Yes

Principal dx of intracerebral hemorrhage?

No

Stop. Not in measure population

Yes

Yes

STK-01

STK-07

STK-08

STK-09

STK-10
Measure Information Form

DSC Measure Set: Stroke

Candidate Measure ID: DSC/Stroke-01

Performance Measure Name: Deep Vein Thrombosis (DVT) Prophylaxis
Patients with an ischemic stroke or a hemorrhagic stroke and who are non-ambulatory should start receiving DVT prophylaxis by end of hospital day two.

Rationale:
Patients experiencing a stroke that involves a paretic or paralyzed lower extremity are at increased risk of developing deep vein thrombosis (DVT). 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 DVT, through the use of prophylactic strategies, in at risk patients is a noted recommendation in numerous clinical practice guidelines. Non-pharmacologic approaches include early mobilization and use of intermittent pneumatic compression stockings. Pharmacologic approaches involve early anticoagulant therapy including the administration of subcutaneous unfractionated heparin, low-molecular-weight (LMW) heparins and heparinoids if there are no contraindications. Aspirin alone is not recommended as an agent to prevent DVT.

Clinical Practice Guidelines Supporting Measure:
- 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

Type of Measure: Process

Improvement Noted As: An increase in rate

Numerator Statement: Non-ambulatory ischemic or hemorrhagic stroke patients who had DVT prophylaxis initiated by end of hospital day two.

Included Populations: Not applicable

Excluded Populations: None

Data Elements:
- DVT Prophylaxis Initiated by End of Hospital Day 2

Denominator Statement: Ischemic or hemorrhagic stroke patients who are non-ambulatory at the end of hospital day 2.
Included Populations: *
- Patients with a diagnosis of ischemic or hemorrhagic stroke. Refer to Appendices, Table 1 for ICD-9-CM principal diagnosis codes for ischemic and hemorrhagic stroke.
- Patients with a diagnosis of hemorrhagic stroke. Refer to Appendices, Table 2 for ICD-9-CM principal diagnosis codes for hemorrhagic stroke.
- Patients who are non-ambulatory by end of hospital day 2

* Refer to Get With The Guidelines & Coverdell specific processes for identifying populations for working rates

Excluded Populations:
- Patients who are discharged prior to end of hospital day 2
- Patients receiving comfort measures only by end of hospital day 2
- Patients ambulating by end of hospital day 2
- Patients admitted for the performance of elective carotid intervention
- Patients less than 18 years of age

Data Elements:
General data elements (applicable to all measures):
- Admission Date
- Arrival Date
- Arrival Time
- Birthdate
- Case Identifier
- Comfort Measures Only
- Discharge Date
- Discharge Status
- Hispanic Ethnicity
- ICD-9-CM Principal Diagnosis Code
- Point of Origin for Admission or Visit
- Race
- Report Period
- Sex

Clinical/measure specific data elements:
- Patient Ambulatory at End of Hospital Day Two
- Admitted for Elective Carotid Intervention

Risk Adjustment: No

Data Collection Approach: Concurrent and retrospective data collection through administrative data/claims data, and medical record.

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

Age Groups: ≥ 18

Data Reported As: Proportion

Setting: Inpatient Hospital - Primary Stroke Centers

Report Period: Quarterly with monthly data points
Selected References:
Gregory W. Albers, Pierre Amarenco, J. Donald Easton, Ralph L. Sacco, and Philip Teal


STK-01: DVT Prophylaxis

Compute hospital day 2

Pt. discharged before end of hospital day 2?

Yes → Stop: Not in measure population

No → Pt. ambulatory at end of hospital day 2?

Yes → Comfort Measures Only by end of Hospital Day 2?

Yes → NC

No → DVT Prophylaxis initiated by end of day 2?

Yes → E

No → D

Rate = E/(D + E)
Measure Information Form

DSC Measure Set: Stroke

Measure ID: DSC/Stroke-02

Performance Measure Name: Discharged on Antithrombotic Therapy

Patients with an ischemic stroke prescribed antithrombotic therapy at 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 deep vein thrombosis are insufficient antithrombotic therapy to prevent recurrent ischemic stroke or TIA.

Clinical Practice Guidelines Supporting Measure:
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

Type of Measure: Process

Improvement Noted As: An increase in rate

Numerator Statement: Number of patients prescribed antithrombotic therapy at hospital discharge
**Included Populations:** Not applicable

**Excluded Populations:** None

**Data Elements:**
*Antithrombotic Therapy Prescribed at Discharge*

**Denominator Statement:** Number of patients with ischemic stroke

**Included Populations:** *
Patients with a principal diagnosis of ischemic stroke. Refer to Appendix, Table 1 for appropriate ICD-9-CM principal diagnosis codes.

* Refer to Get With The Guidelines & Coverdell specific processes for identifying populations for working rates

**Excluded Populations:**
Patients discharged/transferred to another short term general hospital for inpatient care
Patients who expired
Patients who left against medical advice
Patients discharged to hospice (home or facility)
Patients receiving comfort measures only
Patients for whom discharge destination cannot be determined or unknown
Patients admitted for the performance of elective carotid intervention
Patients less than 18 years of age

**Data Elements:**
*General data elements (applicable to all measures):*
  - Admission Date
  - Arrival Date
  - Arrival Time
  - Birthdate.
  - Case Identifier
  - Comfort Measures Only
  - Discharge Date
  - Discharge Status
  - Hispanic Ethnicity
  - ICD-9-CM Principal Diagnosis Code
  - Point of Origin for Admission or Visit
  - Race
  - Report Period
  - Sex

*Clinical/measure specific data elements:*
  - Admitted for Elective Carotid Intervention

**Risk Adjustment:** No

**Data Collection Approach:** Concurrent and retrospective data collection through administrative data/claims data, and medical record.

**Data Accuracy:**
**ICD-9-CM Codes:** Variation may exist in the assignment of ICD-9-CM codes; therefore, coding practices may require evaluation to ensure consistency.
Age Groups: ≥ 18

Data Reported As: Proportion

Setting: Inpatient Hospital - Primary Stroke Centers

Report Period: Quarterly with monthly data points

Selected References:


STK-02: Discharged on Antithrombotic Therapy

Discharge Status? = 02, 07, 20, 50, 51, 66, Unknown

= 01, 03, 04, 05, 06, 43, 61, 62, 63, 64, 65, 70

Comfort Measures Only? Yes

Antithrombotic Therapy Prescribed @ Discharge? Yes

Rate = $E/(D+E)$
Measure Information Form

DSC Measure Set: Stroke

Candidate Measure ID: DSC/Stroke-03

Performance Measure Name: Patients with Atrial Fibrillation/Flutter Receiving Anticoagulation Therapy
Patients with an ischemic stroke with atrial fibrillation/flutter discharged on anticoagulation therapy.

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.

Clinical Practice Guidelines Supporting Measure:
Fuster et al., ACC/AHA/ESC Guidelines for the Management of Patients with Atrial Fibrillation, JACC Vol.38, August 2001:1231-6
Larry B. Goldstein, Chair; Robert Adams; Mark J. Albert; Lawrence J. Appel; Lawrence M. Brass; Cheryl D. Bushnell; Antonio Culebras; Thomas J. DeGraba; Philip B. Gorelick; John R. Guyton; Robert G. Hart; George Howard; Margaret Kelly-Hayes; J.V. (Ian) Nixon; Ralph L. Sacco. Primary Prevention of Ischemic Stroke: A Guideline From the American Heart Association/American Stroke Association Stroke Council: Cosponsored by the Atherosclerotic Peripheral Vascular Disease Interdisciplinary Working Group; Cardiovascular Nursing Council; Clinical Cardiology Council; Nutrition, Physical Activity, and Metabolism Council; and the Quality of Care and Outcomes Research Interdisciplinary Working Group: The American Academy of Neurology affirms the value of this guideline. Stroke. 2006;37:1583

Type of Measure: Process

Improvement Noted As: An increase in rate
**Numerator Statement:** Patients discharged on anticoagulation therapy

**Included Populations:** Not applicable

**Excluded Populations:** None

**Data Elements:**

Patient Discharged on Anticoagulation Therapy

**Denominator Statement:** Patients with a diagnosis of ischemic stroke with documented atrial fibrillation/flutter.

**Included Populations***

Patients with a diagnosis of ischemic stroke. Refer to Appendices, Table 1 for ICD-9-CM Principal Diagnosis Codes for ischemic stroke.

Patients with an "other" diagnosis of atrial fibrillation: ICD-9-CM Diagnosis Codes 427.31 or 427.32.

* Refer to Get With The Guidelines & Coverdell specific processes for identifying populations for working rates

**Excluded Populations:**

Patients discharged/transferred to another short term general hospital for inpatient care

Patients who expired

Patients who left against medical advice

Patients discharged to hospice (home or facility)

Patients receiving comfort measures only

Patients for whom discharge destination cannot be determined or unknown

Patients admitted for the performance of elective carotid intervention

Patients less than 18 years of age

**Data Elements:**

**General data elements (applicable to all measures):**

Admission Date

Arrival Date

Arrival Time

Birthdate

Case Identifier

Comfort Measures Only

Discharge Date

Discharge Status

Hispanic Ethnicity

ICD-9-CM Principal Diagnosis Code

Point of Origin for Admission or Visit

Race

Report Period

Sex

**Clinical/measure specific data elements:**

Admitted for Elective Carotid Intervention

Atrial Fibrillation/Flutter

**Risk Adjustment:** No
Data Accuracy:
ICD-9-CM Codes: Variation may exist in the assignment of ICD-9-CM codes; therefore, coding practices may require evaluation to ensure consistency.

Data Collection Approach: Concurrent and retrospective data collection through administrative data/claims data, and medical record.

Age Groups: ≥ 18

Data Reported As: Proportion

Setting: Inpatient Hospital - Primary Stroke Centers

Report Period: Quarterly

Selected References:


Larry B. Goldstein, Chair; Robert Adams; Mark J. Albert; Lawrence J. Appel; Lawrence M. Brass; Cheryl D. Bushnell; Antonio Culebras; Thomas J. DeGraba; Philip B. Gorelick; John R. Guyton; Robert G. Hart; George Howard; Margaret Kelly-Hayes; J.V. (Ian) Nixon; Ralph L. Sacco. Primary Prevention of Ischemic Stroke: A Guideline From the American Heart Association/American Stroke Association Stroke Council: Cosponsored by the Atherosclerotic Peripheral Vascular Disease Interdisciplinary Working Group; Cardiovascular Nursing Council; Clinical Cardiology Council; Nutrition, Physical Activity, and Metabolism Council; and the Quality of Care and Outcomes Research Interdisciplinary Working Group: The American Academy of Neurology affirms the value of this guideline. Stroke. 2006;37:1583
STK-03: Patients With Atrial Fibrillation/Flutter Receiving Anticoagulation Therapy

Discharge Status? = 02, 07, 20, 50, 51, 66, Unknown

Stop. Not in population.

Comfort Measures Only? Yes

Atrial Fibrillation/Flutter? No

Rate = E/(D+E)

D

Patient Discharged on Anticoagulation Therapy? No

E

Stop
Measure Information Form

DSC Measure Set: Stroke

Candidate Measure ID: DSC/Stroke-04: Thrombolytic Therapy Administered

Performance Measure Name: Acute ischemic stroke patients who arrive at the hospital within 120 minutes (2 hours) of time last known well and for whom IV t-PA was initiated at this hospital within 180 minutes (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 tPA 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.

Clinical Practice Guidelines Supporting Measure:
Diagnosis and Initial Treatment of Ischemic Stroke, Institute for Clinical Systems Improvement (ICSI), 2001.
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)

Type of Measure: Process

Improvement Noted As: An increase in rate

Numerator Statement: The number of patients for whom IV thrombolytic therapy was initiated at this hospital within 3 hours (≤ 180 minutes) of time last known well.

Included Populations: Not applicable
Excluded Populations: None

Data Elements:
- Date IV Thrombolytic Administered at This Hospital
- Date Last Known Well
- IV Thrombolytic Administered
- Time IV Thrombolytic Administered at This Hospital
- Time Last Known Well

Denominator Statement: All patients with acute ischemic stroke whose time of arrival is within 2 hours (120 minutes) of time last known well.

Included Populations: *
- Patients with a diagnosis of ischemic stroke. (Refer to Appendices, Table 1 for ICD-9-CM principal diagnosis codes for ischemic stroke)
- Time last known well ≤ 2 hours from arrival time

* Refer to Get With The Guidelines & Coverdell specific processes for identifying populations for working rates

Excluded Populations:
- Patients admitted for the performance of elective carotid intervention
- Patients less than 18 years of age
- Time last known well to arrival in the emergency department greater than (> 2 hours or unknown

Data Elements:
General data elements (applicable to all measures):
- Admission Date
- Arrival Date
- Arrival Time
- Birthdate
- Case Identifier
- Comfort Measures Only
- Discharge Date
- Discharge Status
- Hispanic Ethnicity
- ICD-9-CM Principal Diagnosis Code
- Point of Origin for Admission or Visit
- Race
- Report Period
- Sex

Clinical/measure specific data elements:
- Date Last Known Well
- Time Last Known Well
- Admitted for Elective Carotid Intervention

Risk Adjustment: No

Data Collection Approach: Concurrent and retrospective data collection through administrative data/claims data, and medical record.
Data Accuracy:
ICD-9-CM Codes: Variation may exist in the assignment of ICD-9-CM codes; therefore, coding practices may require evaluation to ensure consistency.

Age Groups: ≥ 18

Data Reported As: Proportion

Setting: Inpatient Hospital - Primary Stroke Centers

Report Period: Quarterly with monthly data points

Selected References:


STK-04: Thrombolytic Therapy Administered

STK-04

Compute Arrival Time - Time Last Known Well

Difference Between Arrival Time & Time Last Known Well?

> 2 hrs or ND

Stop. Not in population

≤ 2 hrs

IV Thrombolytic Administered?

Yes

Compute Time IV Thrombolytic Therapy Administered - Time Last Known Well

Difference Between Time IV Thrombolytic Therapy Administered and Time Last Known Well?

> 3 hrs.

No

NC

D

≤ 3 hrs.

E

Stop

Rate = \( \frac{E}{D+E} \)
Measure Information Form

DSC Measure Set: Stroke

Candidate Measure ID: DSC/Stroke-05

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

Patients with ischemic stroke who receive antithrombotic therapy by the end of hospital day two.

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 initiated within 48 hours 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 deep vein thrombosis are insufficient antithrombotic therapy to prevent recurrent ischemic stroke or TIA.

Clinical Practice Guidelines Supporting Measure:


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

Type of Measure: Process

Improvement Noted As: An increase in rate

Numerator Statement: Patients with ischemic stroke who receive antithrombotic therapy by end of hospital day two

Included Populations: Not applicable
Excluded Populations: None

Data Elements:

Antithrombotic Therapy Administered by End of Hospital Day Two

Denominator Statement: All patients with ischemic stroke

Included Populations: *

Patients with a diagnosis of ischemic stroke. Refer to Appendices, Table 1 for ICD-9-CM principal diagnosis codes for ischemic stroke.

* Refer to Get With The Guidelines & Coverdell specific processes for identifying populations for working rates

Excluded Populations:

Patients who received IV or IA thrombolytic therapy at your hospital or another hospital
Patients discharged before the end of hospital day 2
Patients receiving comfort measures only by end of hospital day 2
Patients admitted for the performance of elective carotid intervention
Patients less than 18 years of age

Data Elements:

General data elements (applicable to all measures):

Admission Date
Arrival Date
Arrival Time
Birthdate
Case Identifier
Comfort Measures Only
Discharge Date
Discharge Status
Hispanic Ethnicity
ICD-9-CM Principal Diagnosis Code
Point of Origin for Admission or Visit
Race
Report Period
Sex

Clinical/measure specific data elements:

Admitted for Elective Carotid Intervention
Patient Received IV/IA Thrombolytic Therapy

Risk Adjustment: No

Data Collection Approach: Concurrent and retrospective data collection through administrative data/claims data, and medical record.

Data Accuracy:

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

Age Groups: ≥ 18

Data Reported As: Proportion
Setting: Inpatient Hospital - Primary Stroke Centers

Report Period: Quarterly with monthly data points

Selected References:


STK-05: Antithrombotic Therapy by End of Hospital Day 2

Compute Hospital Day 2

Patient received IV/IA Thrombolytic Therapy?

No

Discharged By End of Hospital Day 2?

No

Comfort Measures Only by End of Hospital Day 2?

No

Antithrombotic Therapy Administered by End of Hospital Day 2?

Yes

Rate = \( E/(D+E) \)
Measure Information Form

DSC Measure Set: Stroke

Candidate Measure ID: DSC/Stroke-06

Performance Measure Name: Discharged on Statin Medication

Ischemic stroke patients with LDL > 100, or LDL not measured, or, who were on cholesterol reducing therapy prior to hospitalization are discharged on statin medication.

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 > 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 > 100 mg/dl (or with LDL < 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 outpatient 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 ≥ 100 mg/dl (or with LDL < 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 <100 mg/dL. An LDL-C <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 ≥ 100 mg/dl (or with LDL < 100 mg/dl due to being on lipid lowering therapy prior to admission).

Clinical Practice Guideline Supporting Measure:

Type of Measure:  Process
Improvement Noted As: An increase in rate

Numerator Statement:  Patients who were prescribed statin medication at hospital discharge

Included Populations:  Not applicable
Excluded Populations:  None

Data Elements:  Statin medication prescribed at discharge

Denominator Statement:  All patients with an LDL ≥ 100 mg/dL, OR LDL not measured, OR who were on cholesterol reducing therapy prior to hospitalization

Included Populations: *
Patients with a diagnosis of ischemic stroke. Refer to Appendices, Table 1 for ICD-9-CM principal diagnosis codes for ischemic stroke.
Patients with LDL ≥ 100 mg/dL
Patients with LDL not measured
Patients who were on cholesterol reducing therapy prior to hospitalization. Refer to Appendices, Table 3 for a list of cholesterol-reducing medications.

Excluded Populations
Patients discharged/ transferred to another short term general hospital for inpatient care
Patients who expired
Patients who left against medical advice
Patients discharged to hospice (home or facility)
Patients receiving comfort measures only
Patients for whom discharge destination cannot be determined or unknown
Patients admitted for the performance of elective carotid intervention
Patients less than 18 years of age
Patients with spontaneous LDL < 100 mg/dL
Patients without evidence of atherosclerosis

**Data Elements:**
All general data elements AND:
- Admitted for elective carotid intervention
- Cholesterol reducing therapy prior to hospitalization
- Evidence of atherosclerosis
- LDL measured
- LDL ≥ 100 mg/dL

**Risk Adjustment:** No

**Data Collection Approach:** Concurrent and retrospective data collection through administrative data/claims data, and medical record.

**Age Groups:** ≥ 18

**Data Reported As:** Proportion

**Setting:** Inpatient Hospital - Primary Stroke Centers

**Report Period:** Quarterly with monthly data points

**Selected References:**


STK-06: Discharged on Statin Medication

Discharge Status? =02, 07, 20, 50, 51, 66, Unknown
01, 03, 04, 05, 06, 43, 61, 62, 63, 64, 65, 70

Comfort Measures Only? Yes

Evidence of Atherosclerosis? Yes

Cholesterol Reducing Therapy Prior to Hospitalization? No

LDL Measured? Yes

LDL ≥ 100? No

STK-06: Discharged on Statin Medication
Evidence of Atherosclerosis?

No

Yes

Rate = E/(D + E)

No

Yes
Measure Information Form

**DSC Measure Set:** Stroke

**Candidate Measure ID:** DSC/Stroke-07

**Performance Measure Name:** Dysphagia Screening

Patients with ischemic or hemorrhagic stroke who undergo screening for dysphagia with an evidence-based bedside testing protocol approved by the hospital before being given any food, fluids, or medication by mouth.

**Rationale:** Dysphagia is a potentially serious complication of stroke. The importance of assessing a patient’s ability to swallow, before approving the oral intake of fluids, food or medication, has been noted in multiple practice guidelines including the Agency for Healthcare Research and Quality (AHRQ) Post-Stroke Rehabilitation guideline. It has been estimated that 27-50% of stroke patients develop dysphagia. Furthermore, 43-54% of stroke patients with dysphagia will experience aspiration and of those patients 37% will develop pneumonia. Dysphagia may contribute to malnutrition and increased length of hospital stay. Most guidelines include a recommendation that all patients be screened for their ability to swallow and those with abnormal results be referred for a complete examination by a speech and language pathologist or other qualified individual. Recent evidence suggests that pneumonia rates in this population may be reduced when a systematic program of diagnosis and treatment of dysphagia is included in an ischemic stroke management plan.

**Clinical Practice Guideline Supporting Measure:**
- Post-Stroke Rehabilitation Guideline, Agency for Healthcare Research and Quality (formerly Agency for Health Care Policy and Research), 1995
- Duncan et al, Stroke Rehabilitation Clinical Practice Guidelines (Stroke. 2005;36:e100-e143.)
- VA/DoD Clinical Practice Guideline for the Management of Stroke Rehabilitation in the Primary Care Setting, Department of Veteran Affairs Department of Defense, 2003

**Type of Measure:** Process

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

**Numerator Statement:** Patients who were screened for dysphagia before taking any food, fluids, or medications by mouth

- **Included Populations:** Not applicable
- **Excluded Populations:** None

**Data Elements:**
- *Dysphagia Screen*

**Denominator Statement:** All patients with acute ischemic or hemorrhagic stroke

- **Included Populations:** *
  - Patients with a diagnosis of ischemic stroke. Refer to Appendices, Table 1 for ICD-9-CM principal diagnosis codes for ischemic stroke.
Patients with a diagnosis of hemorrhagic stroke. Refer to Appendices, Table 2 for ICD-9-CM principal diagnosis codes for hemorrhagic stroke.

* Refer to Get With The Guidelines & Coverdell specific processes for identifying populations for working rates

**Excluded Populations:**
- Patients admitted for the performance of elective carotid intervention
- Patients less than 18 years of age
- Patients who are NPO throughout the hospital stay

**Data Elements:**

**General data elements (applicable to all measures):**
- Admission Date
- Arrival Date
- Arrival Time
- Birthdate
- Case Identifier
- Comfort Measures Only
- Discharge Date
- Discharge Status
- Hispanic Ethnicity
- ICD-9-CM Principal Diagnosis Code
- Point of Origin for Admission or Visit
- Race
- Report Period
- Sex

**Measure specific data elements**
- NPO throughout the hospital stay
- Admitted for Elective Carotid Intervention

**Risk Adjustment:** No

**Data Collection Approach:** Concurrent and retrospective data collection through administrative data/claims data, and medical record.

**Data Accuracy:**

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

**Age Groups:** Age ≥ 18

**Data Reported As:** Proportion

**Setting:** Primary Stroke Centers

**Report Period:** Quarterly with monthly data points

**Selected References:**
STK-07: Dysphagia Screening

Rate = \[
\frac{E}{D + E}
\]
Measure Information Form

DSC Measure Set: Stroke

Candidate Measure ID: DSC/Stroke-08

Performance Measure Name: Stroke Education
Patients with ischemic or hemorrhagic stroke or their caregivers who were given education and/or educational materials during the hospital stay addressing all of the following: personal risk factors for stroke, warning signs for stroke, activation of emergency medical system, need for follow-up after discharge, and medications prescribed at discharge.

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.

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

Type of Measure: Process

Improvement Noted As: An increase in rate

Numerator Statement: Stroke patients with documentation that they or their caregivers were given education and/or educational material addressing all of the following:
1. Personal risk factors for stroke
2. Warning signs for stroke
3. Activation of emergency medical system
4. Need for follow-up after discharge
5. Medications prescribed at discharge

Included Populations: Not applicable

Excluded Populations: None
Data Elements:

- Education addresses need for follow-up after discharge
- Education addresses medications prescribed at discharge
- Education addresses risk factors for stroke
- Education addresses warning signs and symptoms of stroke
- Education addresses activation of emergency medical system

Please Note: The data elements for each of the 5 education components provide the opportunity to assess each component individually. However, completion of all 5 education categories is required for this composite measure.

Denominator Statement: Patients with ischemic stroke or hemorrhagic stroke

Included Populations:*

- Patients with a diagnosis of ischemic stroke. Refer to Appendices, Table 1 for ICD-9-CM principal diagnosis codes for ischemic stroke.
- Patients with a diagnosis of hemorrhagic stroke. Refer to Appendices, Table 2 for ICD-9-CM principal diagnosis codes for hemorrhagic stroke.

* Refer to Get With The Guidelines & Coverdell specific processes for identifying populations for working rates

Excluded Populations:

- Patients discharged/transferred to another short term hospital for inpatient care
- Patients who expired
- Patients discharged against medical advice
- Patients discharged to hospice (home or facility)
- Patients receiving comfort measures only
- Patients for whom discharge destination cannot be determined or unknown
- Patients admitted for the performance of elective carotid intervention
- Patients less than 18 years of age

Data Elements:

General data elements (applicable to all measures):

- Admission Date
- Arrival Date
- Arrival Time
- Birthdate
- Case Identifier
- Comfort Measures Only
- Discharge Date
- Discharge Status
- Hispanic Ethnicity
- ICD-9-CM Principal Diagnosis Code
- Point of Origin for Admission or Visit
- Race
- Report Period
- Sex

Clinical/measure specific data elements:

- Admitted for Elective Carotid Intervention

Risk Adjustment: No
**Data Collection Approach:** Concurrent and retrospective data collection through administrative data/claims data, and medical record.

**Age Groups:** Age ≥ 18

**Data Reported As:** Proportion

**Setting:** Inpatient Hospital - Primary Stroke Centers

**Report Period:** Quarterly with monthly data points

**Selected References:**

STK-08: Stroke Education

Discharge Status?

- 02, 07, 20, 50, 51, 66, Unknown
- 01, 03, 04, 05, 06, 43, 61, 62, 63, 64, 65, 70

Comfort Measures Only?

Yes

No

Education addresses need for follow-up after discharge?

Yes

No

Education addresses medications prescribed at discharge?

Yes

No

Education addresses personal risk factors for stroke?

Yes

No

STK-08 (2)
STK-08 (2)

Yes

Education addresses warning signs and symptoms of stroke?

Yes

Education addresses activation of EMS?

Yes

E

Stop

Rate = \( \frac{E}{D+E} \)
Measure Information Form

DSC Measure Set: Stroke

Candidate Measure ID: DSC/Stroke-09

Smoking Cessation Performance Measure Name: Smoking Cessation/Advice/Counseling

Patients with ischemic or hemorrhagic stroke with a history of smoking cigarettes, who are, or whose caregivers are, given smoking cessation advice or counseling during hospital stay. For the purposes of this measure, a smoker is defined as someone who has smoked cigarettes anytime during the year prior to hospital arrival.

Rationale: Cigarette smoking is the single most alterable risk factor contributing to premature morbidity and mortality, accounting for approximately 430,000 deaths in the United States. Smoking nearly doubles the risk of ischemic stroke. Numerous prospective investigations have demonstrated substantial decrease in coronary heart disease mortality for former smokers, and similar rapid decreases in risk with smoking are seen for ischemic stroke. The Framingham Heart Study concluded that smoking made a significant independent contribution to the risk of stroke. Although no randomized controlled trials have been performed, there is very strong consensus that patients who smoke should be counseled to stop smoking to decrease the risk of stroke. Research indicates that patients who receive even brief smoking cessation advice from their physicians are more likely to quit than those receiving no counseling at all. Addressing smoking habits and initiating cessation efforts are reasonable interventions during hospitalization for acute stroke and may promote the patient's medical recovery.

Clinical Practice Guideline Supporting Measure:
Management of Patients with Stroke. Rehabilitation, Prevention and Management of Complications and Discharge Planning, Scottish Intercollegiate Guidelines network, 2002
Ira S. Ockene and Nancy Houston Miller, Cigarette Smoking, Cardiovascular Disease, and Stroke : A Statement for Healthcare Professionals From the American Heart Association Circulation, Nov 1997; 96: 3243 - 3247.

Type of Measure: Process

Improvement Noted As: An increase in rate.

Numerator Statement: Stroke patients (cigarette smokers) who receive smoking cessation advice or counseling during hospital stay, or documentation that patient’s caregiver was given smoking cessation advice or counseling during hospital stay.

Included Populations: Not applicable

Excluded Populations: None
**Data Elements:**
Adult Smoking Counseling

**Denominator Statement:** Ischemic stroke or hemorrhagic stroke patients with a history of smoking cigarettes anytime during the year prior to hospital arrival

**Included Populations:**
Patients with a diagnosis of ischemic stroke. Refer to Appendices, Table 1 for ICD-9-CM principal diagnosis codes for ischemic stroke AND History of smoking cigarettes anytime during the year prior to arrival
Patients with a diagnosis of hemorrhagic stroke. Refer to Appendices, Table 2 ICD-9-CM for principal diagnosis codes for hemorrhagic stroke AND History of smoking cigarettes anytime during the year prior to arrival

* Refer to Get With The Guidelines & Coverdell specific processes for identifying populations for working rates

**Excluded Populations:**
Patients discharged/transferred to another short term hospital for inpatient care
Patients who expired
Patients who left against medical advice
Patients discharged to hospice (home or facility)
Patients receiving comfort measures only
Patients for whom discharge destination cannot be determined or unknown
Patients admitted for the performance of elective carotid intervention
Patients less than 18 years of age

**Data Elements:**

**General data elements (applicable to all measures):**
- Admission Date
- Arrival Date
- Arrival Time
- Birthdate
- Case Identifier
- Comfort Measures Only
- Discharge Date
- Discharge Status
- Hispanic Ethnicity
- ICD-9-CM Principal Diagnosis Code
- Point of Origin for Admission or Visit
- Race
- Report Period
- Sex

**Clinical/measure specific data elements:**
- Adult Smoking History
- Admitted for Elective Carotid Intervention

**Risk Adjustment:** No

**Data Collection Approach:** Concurrent and retrospective data collection through administrative data/claims data, and medical record.
Age Groups: ≥ 18

Data Reported As: Proportion

Setting: Inpatient Hospital - Primary Stroke Centers

Report Period: Quarterly with monthly data points

Selected References:


STK-09: Smoking Cessation/Advice/Counseling

Discharge Status? = 02, 07, 20, 50, 51, 66, Unknown
= 01, 03, 04, 05, 06, 43, 61, 62, 63, 64, 65, 70

Comfort Measures Only? Yes
No

Adult Smoking History? Yes
No

Adult Smoking Counseling? Yes
No

D

E

Rate = E/(D + E)
Measure Information Form

DSC Measure Set: Stroke

Candidate Measure ID: DSC/Stroke-10

Performance Measure Name: Assessed for Rehabilitation
Patients with an ischemic stroke or hemorrhagic stroke 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.

Clinical Practice Guidelines Supporting Measure:
- VA/DoD Clinical Practice Guideline for the Management of Stroke Rehabilitation in the Primary Care Setting, 2003
- 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
- Management of patients with stroke. Rehabilitation, prevention and management of complications, and discharge planning, Scottish Intercollegiate network Guidelines Network (SIGN), 2002

Type of Measure: Process

Improvement Noted As: An increase in rate

Numerator Statement: Patients assessed for or who received rehabilitation services

Included Populations: Not applicable
Excluded Populations: None

Data Elements: Assessed for Rehabilitation Services

Denominator Statement: All patients with ischemic stroke, or hemorrhagic stroke

Included Populations:* Patients with a diagnosis of ischemic stroke. Refer to Appendices, Table 1 for ICD-9-CM principal diagnosis codes for ischemic stroke.
Patients with a diagnosis of hemorrhagic stroke. Refer to Appendices, Table 2 for ICD-9-CM principal diagnosis codes for hemorrhagic stroke.

* Refer to Get With The Guidelines & Coverdell specific processes for identifying populations for working rates

**Excluded Populations:**
- Patients discharged/transferred to another short term hospital for inpatient care
- Patients who expired
- Patients who left against medical advice
- Patients discharged to hospice (home or facility)
- Patients receiving comfort measures only
- Patients for whom discharge destination cannot be determined or unknown
- Patients admitted for the performance of elective carotid intervention
- Patients less than 18 years of age

**Data Elements:**

**General data elements (applicable to all measures):**
- Admission Date
- Arrival Date
- Arrival Time
- Birthdate
- Case Identifier
- Comfort Measures Only
- Discharge Date
- Discharge Status
- Hispanic Ethnicity
- ICD-9-CM Principal Diagnosis Code
- Point of Origin for Admission or Visit
- Race
- Report Period
- Sex

**Clinical/measure specific data elements:**
- Admitted for Elective Carotid Intervention

**Risk Adjustment:** No

**Data Collection Approach:** Concurrent and retrospective data collection through administrative data/claims data, and medical record.

**Age Groups:** ≥ 18

**Data Reported As:** Proportion

**Setting:** Inpatient Hospital - Primary Stroke Centers

**Report Period:** Quarterly with monthly data points

**Selected References:**


STK-10: Assessed for Rehabilitation

Rate = \( \frac{E}{D + E} \)
## DSC Stroke Performance Measure Data Element Dictionary

### Alphabetical Data Element List

<table>
<thead>
<tr>
<th>Element Name</th>
<th>Page #</th>
<th>Collected For:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admission Date</td>
<td>2</td>
<td>All Records</td>
</tr>
<tr>
<td>Admitted for Elective Carotid Intervention</td>
<td>3</td>
<td>All Records**</td>
</tr>
<tr>
<td>Adult Smoking Counseling</td>
<td>4</td>
<td>STK-9</td>
</tr>
<tr>
<td>Adult Smoking History</td>
<td>6</td>
<td>STK-9</td>
</tr>
<tr>
<td>Antithrombotic Therapy Administered by End of Hospital Day 2</td>
<td>9</td>
<td>STK-5</td>
</tr>
<tr>
<td>Antithrombotic Therapy Prescribed At Discharge</td>
<td>11</td>
<td>STK-2</td>
</tr>
<tr>
<td>Arrival Date</td>
<td>13</td>
<td>All Records</td>
</tr>
<tr>
<td>Arrival Time</td>
<td>14</td>
<td>All Records</td>
</tr>
<tr>
<td>Assessed for Rehabilitation Services</td>
<td>15</td>
<td>STK-10</td>
</tr>
<tr>
<td>Atrial Fibrillation/Flutter</td>
<td>17</td>
<td>STK-3</td>
</tr>
<tr>
<td>Birthdate</td>
<td>19</td>
<td>All Records</td>
</tr>
<tr>
<td>Case Identifier</td>
<td>20</td>
<td>All Records**</td>
</tr>
<tr>
<td>Cholesterol Reducing Therapy Prior to Hospitalization</td>
<td>21</td>
<td>STK-6</td>
</tr>
<tr>
<td>Comfort Measures Only</td>
<td>22</td>
<td>All Records</td>
</tr>
<tr>
<td>Date IV Thrombolytic Administered at This Hospital</td>
<td>24</td>
<td>STK-4</td>
</tr>
<tr>
<td>Date Last Known Well</td>
<td>25</td>
<td>STK-4</td>
</tr>
<tr>
<td>Discharge Date</td>
<td>26</td>
<td>All Records</td>
</tr>
<tr>
<td>Discharge Status</td>
<td>27</td>
<td>All Records</td>
</tr>
<tr>
<td>DVT Prophylaxis Initiated by End of Hospital Day 2</td>
<td>29</td>
<td>STK-1</td>
</tr>
<tr>
<td>Dysphagia Screen</td>
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<td>STK-7</td>
</tr>
<tr>
<td>Education Addresses Activation of Emergency Medical System</td>
<td>33</td>
<td>STK-8</td>
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<tr>
<td>Education Addresses Follow-up After Discharge</td>
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<td>STK-8</td>
</tr>
<tr>
<td>Education Addresses Medications Prescribed At Discharge</td>
<td>37</td>
<td>STK-8</td>
</tr>
<tr>
<td>Education Addresses Risk Factors For Stroke</td>
<td>39</td>
<td>STK-8</td>
</tr>
<tr>
<td>Education Addresses Warning Signs and Symptoms of Stroke</td>
<td>41</td>
<td>STK-8</td>
</tr>
<tr>
<td>Evidence of Atherosclerosis</td>
<td>43</td>
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</tr>
<tr>
<td>Hispanic Ethnicity</td>
<td>45</td>
<td>All Records*</td>
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<tr>
<td>ICD-9-CM Principal Diagnosis Code</td>
<td>46</td>
<td>All Records</td>
</tr>
<tr>
<td>IV Thrombolytic Administered</td>
<td>47</td>
<td>STK-4</td>
</tr>
<tr>
<td>LDL &gt; 100 mg/dl</td>
<td>49</td>
<td>STK-6</td>
</tr>
<tr>
<td>LDL Measured</td>
<td>50</td>
<td>STK-6</td>
</tr>
<tr>
<td>NPO For Entire Hospital Stay</td>
<td>51</td>
<td>STK-7</td>
</tr>
<tr>
<td>Patient Ambulatory at End of Hospital Day Two</td>
<td>52</td>
<td>STK-1</td>
</tr>
<tr>
<td>Patient Discharged on Anticoagulation Therapy</td>
<td>53</td>
<td>STK-3</td>
</tr>
<tr>
<td>Patient Received IV/IA Thrombolytic Therapy</td>
<td>54</td>
<td>STK-5</td>
</tr>
<tr>
<td>Point of Origin for Admission or Visit</td>
<td>55</td>
<td>All Records*</td>
</tr>
<tr>
<td>Race</td>
<td>59</td>
<td>All Records*</td>
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<tr>
<td>Report Period</td>
<td>61</td>
<td>All Records**</td>
</tr>
<tr>
<td>Sex</td>
<td>62</td>
<td>All Records*</td>
</tr>
<tr>
<td>Statin Medication Prescribed At Discharge</td>
<td>63</td>
<td>STK-6</td>
</tr>
<tr>
<td>Time IV Thrombolytic Administered at This Hospital</td>
<td>65</td>
<td>STK-4</td>
</tr>
<tr>
<td>Time Last Known Well</td>
<td>66</td>
<td>STK-4</td>
</tr>
</tbody>
</table>
Data Element Name: Admission Date

Collected For: All Records

Definition: The month, day and year of admission for inpatient care

Suggested Data Collection Question: What is the date the patient was admitted to inpatient care?

Format: MM-DD-YYYY

Allowable Values: MM = Month (01 – 12)
DD = Day (01 - 31)
YYYY = Year (2000 – 9999)

Notes for Abstraction: The abstractor should NOT assume that the UB-04 claim information for the admission date is correct. If the abstractor determines through chart review that the UB-04 date is incorrect, she/he should correct and override the downloaded value. If the abstractor is unable to determine the correct admission date through chart review, she/he should default to the UB-04 admission date.

Suggested Data Sources: Emergency department record
Face sheet
History and physical
Nursing admission assessment
Physician orders
UB-04 (previously UB-92)

Guidelines for Abstraction:

<table>
<thead>
<tr>
<th>Inclusion</th>
<th>Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Admit to observation</td>
</tr>
<tr>
<td></td>
<td>Arrival date</td>
</tr>
</tbody>
</table>
Data Element Name: Admitted for Elective Carotid Intervention

Collected For: All Records

Definition: Documentation in the medical record that the current hospitalization is solely for the performance of an elective carotid intervention, (e.g., elective carotid endarterectomy, angioplasty, carotid stenting).

Suggested Data Collection Question: Was this patient admitted for the sole purpose of performance of an elective carotid intervention?

Format: Alphanumeric

Allowable Values: Y (Yes, this patient was admitted solely for the performance of elective carotid intervention)
N (No, this patient was not admitted solely for the performance of elective carotid intervention OR unable to determine from medical record documentation)

Notes for Abstraction: Patients suffering from an acute stroke during this hospitalization are not considered to have been admitted solely for the purpose of the performance of elective carotid intervention. If the patient was being treated for an acute stroke during this hospitalization, even if a carotid intervention was performed, answer “No” for this data element.

Suggested Data Sources: - History and physical
- OR report
- Progress notes
- Nurses notes

Guidelines for Abstraction:

<table>
<thead>
<tr>
<th>Inclusion</th>
<th>Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients with an ICD-9-CM procedure code of 38.12, if medical record documentation states that the patient was admitted for the elective performance of this procedure.</td>
<td>Patients with an ICD-9-CM procedure code of 38.12, if medical record documentation indicates that the patient is also being treated for an acute stroke during this hospitalization.</td>
</tr>
<tr>
<td>Patients with an ICD-9-CM procedure code of 00.63, if medical record documentation states that the patient was admitted for the elective performance of this procedure.</td>
<td>Patients with an ICD-9-CM procedure code of 00.63, if medical record documentation indicates that the patient is also being treated for an acute stroke during this hospitalization.</td>
</tr>
</tbody>
</table>
Data Element Name:  


Adult Smoking Counseling

Collected For:  

DSC/Stroke-09: Smoking Cessation/ Advice/ Counseling

Definition:  

Documentation in the medical record that smoking cessation advice or counseling was given to the patient or caregiver during this hospital stay for patients 18 years of age and older.

Suggested Data Collection Question:  

Was the adult patient or caregiver given smoking cessation advice or counseling during the hospital stay?

Format:  

Alphanumeric

Allowable Values:  

Y (Yes, patient received smoking cessation advice/counseling during hospital stay)

N (No, smoking cessation advice/counseling was not given OR unable to determine from medical record documentation)

NC (No, smoking cessation advice/counseling was not given. A documented reason exists for not performing counseling)

Notes for Abstraction:  

- If the patient refused smoking cessation advice or counseling during this hospital stay, select “Y”

- If the patient has a history of cigarette smoking within the year prior to arrival date but the patient does not currently smoke, he or she should be advised to continue not smoking. For these patients, if this advice/counseling was not done, select “N”.

- If the patient is prescribed Wellbutrin/bupropion, it should not be assumed that this is a smoking cessation aid unless specifically noted as such. It is sometimes used as an antidepressant unrelated to smoking.

Suggested Data Sources:  

Consultation notes
Discharge instruction sheet
Discharge summary
Emergency department record
History and physical
Medication administration record
Nursing notes
Progress notes
Respiratory therapy notes
Teaching sheet

Excluded Data Sources:  

Any documentation dated/timed after discharge, except discharge summary and operative/procedure/diagnosis test reports (from procedure done during hospital stay).
**Guidelines for Abstraction:**

<table>
<thead>
<tr>
<th>Inclusion</th>
<th>Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cigarette smoking cessation advice/counseling</strong></td>
<td></td>
</tr>
<tr>
<td>- Direct discussion with patient or caregiver about stopping smoking (e.g., “advised patient to stop smoking”)</td>
<td></td>
</tr>
<tr>
<td>- Prescription of smoking cessation aid (e.g., Habitrol, NicoDerm, Nicorette, Nicotrol, Prostep, Zyban) during hospital stay or at discharge</td>
<td></td>
</tr>
<tr>
<td>- Prescription of Wellbutrin/bupropion during hospital stay or at discharge aid or alternative FDA-approved smoking cessation medication if prescribed as smoking cessation</td>
<td></td>
</tr>
<tr>
<td>- Referral to smoking cessation class/program</td>
<td></td>
</tr>
<tr>
<td>- Smoking cessation brochures/handouts/video</td>
<td></td>
</tr>
</tbody>
</table>

**Any of the above interventions directed at the patient’s caregiver if the patient is unable to comprehend qualify as smoking cessation counseling.**
Data Element Name: **Adult Smoking History**

Collected For: **DSC/Stroke-09: Smoking Cessation/ Advice/ Counseling**

Definition: Documentation that the adult patient has smoked cigarettes anytime during the year prior to hospital arrival. Adult is defined as 18 years of age or older.

Suggested Data Collection Question: Did the adult patient smoke cigarettes anytime during the year prior to hospital arrival?

Format: Alphanumeric

Allowable Values: Y (Yes, there is documentation that the adult patient smoked cigarettes anytime during the year prior to hospital arrival.)

N (No, there is documentation that the adult patient did not smoke cigarettes anytime during the year prior to hospital arrival OR smoking history was not addressed OR unable to determine from medical record documentation.

NOTE: If the ICD-9-CM Other Diagnosis Code 305.1 exists, then default the allowable value to Y (Yes).

Notes for Abstraction: In some cases smoking history documentation in one medical record source may further clarify the patient's smoking history documented in another medical record source. Examples:

- Progress note states “history of smoking” and the nursing admission assessment notes “quit 2 years ago” – select “No.”
- Discharge summary states smoker without specifying the type of tobacco and the ED record specifies the type of tobacco as cigar – select “No.”

In cases where conflicting information about the patient's smoking history is documented and there is no specific documentation that the patient has not smoked during the year prior to hospital arrival, select “Yes.” Examples:

- “Current smoker” per H&P, but ED note states “Non-smoker” – select “Yes”
- “Cigarette Smoking: Yes, 1-2 cigarettes a day” on nursing admission note, but “Smoking – Quit” on H&P – select “Yes.”
- “Recent smoker” in H&P, but progress note states “Smokes – No” – select “Yes.”

In cases where at least one source has specific documentation that the patient has not smoked anytime during the year prior to hospital arrival, select “No.” Examples:
“Current smoker” per H&P, but consultation note states patient “quit 2 years ago” – select “No.”
“+ tobacco use” per ED note, “Smoker – Yes” per nursing admission note, but H&P states, “Quit smoking in 2002” – select “No.”
Progress note states “Still smokes occasionally” but nursing admission assessment has “No” circled next to “Tobacco use within past year” – select “No.”

- If there is documentation of current smoking or tobacco use, or a history of smoking or tobacco use, and the type of product is not specified, assume this refers to cigarette smoking.

- Do not include documentation of smoking history referenced as a “risk factor” (e.g., “risk factor: tobacco,” “risk factor: smoking,” “risk factor: smoker”), where current smoking status is indeterminable.

- If there is a history of smoking and documentation that the patient quit “several months ago,” infer the patient smoked within one year prior to arrival, and select “Yes.”

- If there is a history of smoking and documentation indicates the patient quit, but the timeframe in which the patient quit is not clear, select “No.”

Examples:
Nursing admission assessment documents patient as “ex-smoker” or “former smoker,” or simply notes pt. “quit smoking” - select “No.”
“History of tobacco abuse” per H&P, and consultation note states “nonsmoker” - select “No” (not a case of conflicting information).

Suggested Data Sources:
Consultation notes
Discharge summary
Emergency department record
History and physical
Nursing admission assessment
Progress notes
Respiratory Therapy notes

Guidelines for Abstraction:

<table>
<thead>
<tr>
<th>Inclusion</th>
<th>Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cigarette smoking within one year prior to hospital arrival</td>
<td>Cigarette smoking within one year prior to hospital arrival</td>
</tr>
<tr>
<td>+ smoker, type of product not identified</td>
<td>Chewing tobacco use only</td>
</tr>
<tr>
<td>+ tobacco use, type of product not identified</td>
<td>Cigar smoking only</td>
</tr>
<tr>
<td>History of cigarette use without mention of a time frame, if no indication that patient</td>
<td>Cigarette smoking within one year prior to arrival or any of the other inclusion terms described using one of the following</td>
</tr>
<tr>
<td>History of smoking (type of product not identified), without mention of a time frame, if no indication that patient quit</td>
<td>Illegal drug use only (e.g., marijuana)</td>
</tr>
<tr>
<td>History of smoking and documentation that the patient quit “several months ago”</td>
<td>Oral tobacco use only</td>
</tr>
<tr>
<td>History of smoking within one year prior to arrival, type of product not identified</td>
<td>Pipe smoking only</td>
</tr>
<tr>
<td>History of tobacco use (type of product not identified), without mention of a time frame, if no indication that patient quit</td>
<td>Remote smoker (smoked in the past, but greater than one year ago)</td>
</tr>
<tr>
<td>History of tobacco use within one year prior to arrival, type of product not identified</td>
<td>Recent smoker</td>
</tr>
</tbody>
</table>
Data Element Name: Antithrombotic Therapy Administered by End of Hospital Day Two

Collected For: DSC/Stroke-05: Antithrombotic Therapy Administered by End of Hospital Day Two

Definition: Documentation demonstrates that antithrombotic therapy was administered by the end of hospital day two

Suggested Data Collection Question: Was antithrombotic therapy administered by the end of hospital day two?

Format: Alphanumeric

Allowable Values: Y (Yes, antithrombotic therapy was administered by the end of hospital day 2)  
N (No, antithrombotic therapy was not administered by the end of hospital day 2 OR unable to determine from medical record documentation)  
NC (No, antithrombotic therapy was not administered. A documented reason exists for not administering this therapy)

Notes for Abstraction: Antithrombotic Therapy:  
Aspirin (ASA)  
ASA/dipyridamole (Aggrenox) (bid)  
warfarin (Coumadin)  
clopidogrel (Plavix)  
ticlopidine (Ticlid)  
Unfractionated heparin IV  
Full dose LMW heparin

To compute end of hospital day two, count the arrival date as hospital day one. If antithrombotic therapy was administered by 11:59 PM of hospital day two, answer “Yes” for this data element. E.g., Patient arrives at the hospital on Monday at 05:00, answer “Yes” if antithrombotic therapy was administered on or before 23:59 on Tuesday. If patient arrived at the hospital at 23:30 on Monday, answer “Yes” if antithrombotic therapy was administered on or before 23:59 on Tuesday.

Reasons for not prescribing antithrombotic therapy must be documented by a physician, advanced practice nurse or physician assistant (physician/APN/PA). If reasons are not mentioned in the context of antithrombotics, do not make inferences (e.g., do not assume that antithrombotics are not being prescribed because of a bleeding disorder unless documentation explicitly states so.)
Conditions or factors making the administration of antithrombotic therapy inadvisable, inappropriate and/or undesirable are documented (appropriate response is “NC”, a documented reason exists for not administering this therapy). This may include:

- Allergy to or complication r/t antithrombotic (hx/current)
- Aortic dissection (current)
- Bleeding disorder
- Brain/CNS cancer (hx/current)
- CVA, hemorrhagic (hx/current)
- Extensive/metastatic CA (hx/current)
- Hemorrhage, any type (hx/current)
- Intracranial surgery/biopsy (current)
- Patient refusal
- Peptic ulcer (current)
- Planned surgery within 7 days following discharge
- Risk of bleeding (current)
- Unrepaired intracranial aneurysm (hx/current)
- Other (patient/physician)

**Suggested Data Sources:**
- Medication records
- Physician orders
- Clinical logs
- Progress notes

**Guidelines for Abstraction:**

<table>
<thead>
<tr>
<th>Inclusion</th>
<th>Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Patients who are prescribed only low doses (5000 units subQ bid) of heparin or equivalent doses for DVT prophylaxis using LMWH.</td>
</tr>
</tbody>
</table>
Data Element Name: Antithrombotic Therapy Prescribed at Discharge

Collected For: DSC/Stroke-02: Discharged on Antithrombotic Therapy

Definition: Documentation demonstrates that antithrombotic therapy was prescribed at discharge

Suggested Data Collection Question: Was antithrombotic therapy prescribed at discharge?

Format: Alphanumeric

Allowable Values:
Y (Yes, antithrombotic therapy was prescribed at discharge)
N (No, antithrombotic therapy was not prescribed at discharge OR unable to determine from medical record documentation)
NC (No, antithrombotic therapy was not prescribed at discharge. A documented reason exists for not administering this therapy)

Notes for Abstraction:
Antithrombotic Therapy:
Aspirin (ASA)
ASA/dipyridamole (Aggrenox) (bid)
warfarin (Coumadin)
clopidogrel (Plavix)
ticlopidine (Ticlid)
Unfractionated heparin IV
Full dose LMW heparin

Prescribed at discharge: Documentation that patient/caregiver was given a prescription for antithrombotic therapy at time of hospital discharge.

Reasons for not prescribing antithrombotic therapy must be documented by a physician, advanced practice nurse or physician assistant (physician/APN/PA). If reasons are not mentioned in the context of antithrombotics, do not make inferences (e.g., do not assume that antithrombotics are not being prescribed because of a bleeding disorder unless documentation explicitly states so.)

Conditions or factors making the administration of antithrombotic therapy inadvisable, inappropriate and/or undesirable are documented (appropriate response is "NC", documented reason for not prescribing antithrombotic) This may include:
Allergy to or complication r/t antithrombotic (hx/current)
Aortic dissection (current)
Bleeding disorder
Brain/CNS cancer (hx/current)
CVA, hemorrhagic (hx/current)
Extensive/metastatic CA (hx/current)
Hemorrhage, any type (hx/current)
Intracranial surgery/biopsy (current)
Patient refusal
Peptic ulcer (current)
Planned surgery within 7 days following discharge
Risk of bleeding (current)
Unrepaired intracranial aneurysm (hx/current)
Other (patient/physician)

Suggested Data Sources:
- Medication records
- Physician orders
- Clinical logs
- Progress notes
- Discharge summary
- Discharge instructions

Guidelines for Abstraction:

<table>
<thead>
<tr>
<th>Inclusion</th>
<th>Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Patients who are discharged only on low doses (5000 units subQ bid) of heparin or equivalent doses for DVT prophylaxis using LMWH.</td>
</tr>
</tbody>
</table>
Data Element Name: Arrival Date

Collected For: All records

Definition: The earliest documented month, day, and year the patient arrived at the hospital (for example hospital, emergency room, observation unit)

Suggested Data Collection Question: What was the earliest documented date the patient arrived at the hospital?

Format: MM-DD-YYYY

Allowable Values: MM = Month (01 – 12)
DD = Day (01 - 31)
YYYY = Year (2000 – 9999)

Notes for Abstraction: This may differ from the admission date.
When reviewing ED records do NOT include any documentation from external sources (e.g., ambulance records, physician office records, laboratory reports) obtained prior to arrival. The intent is to utilize any documentation which reflects processes that occurred in the ED or hospital.
*Do not use ambulance records to determine arrival date
* Do not use addressographs/stamps
* If the patient is in an outpatient setting of the hospital (e.g., undergoing dialysis, chemotherapy, or an outpatient procedure) and is subsequently admitted to the hospital, use the date the patient presents to the ED or arrives on the floor for inpatient care as arrival date/time.

Suggested Data Sources:
- Any ED documentation (includes ED vital sign record, ED/Outpatient Registration form or triage record)
- Face sheet
- Nursing admission assessment/admitting note
- Observation record
- Procedure notes
- Vital signs graphic record

Guidelines for Abstraction:

<table>
<thead>
<tr>
<th>Inclusion</th>
<th>Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Addressographs/stamps</td>
<td></td>
</tr>
</tbody>
</table>
**Data Element Name:** Arrive Time

**Collected For:** All records

**Definition:** The earliest documented time (military time) the patient arrived at the Emergency Department

**Suggested Data Collection Question:** What was the earliest documented time (military time) the patient arrived at the hospital?

**Format:** HH:MM

**Allowable Values:**
- **HH** = Hour (00-23)
- **MM** = Minutes (00-59)

Converting clock time to military time:
With the exception of midnight and noon
- If the time is in the a.m., conversion is not required
- If the time is in the p.m., add 12 to the clock time hour

For example:
- Midnight – 00:00
- Noon – 12:00
- 11:59 p.m. – 23:59

**Notes for Abstraction:**
- This may differ from the admission time.
- When reviewing ED records do NOT include any documentation from external sources (e.g., ambulance records, physician office records, laboratory reports) obtained prior to arrival. The intent is to utilize any documentation which reflects processes that occurred in the ED or hospital.
- If the patient is in an outpatient setting of the hospital (e.g., undergoing dialysis, chemotherapy, cardiac cath) and is subsequently admitted to the hospital, use the time the patient presents to the ED or arrives on the floor for inpatient care as arrival time.
- For “Direct Admits” to the hospital, use the earliest time the patient arrives at the hospital.

**Suggested Data Sources:**
- Any ED documentation
- Face sheet
- Nursing admission assessment/admitting note
- Observation record
- Procedure notes
- Vital signs graphic record

**Guidelines for Abstraction:**

<table>
<thead>
<tr>
<th>Inclusion</th>
<th>Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Addressographs/stamps</td>
<td></td>
</tr>
</tbody>
</table>
**Data Element Name:** Assessed for Rehabilitation Services  
**Collected For:** DSC/Stroke-10: Assessed for Rehabilitation  
**Definition:** There is documentation in the record that the patient was assessed for or received rehabilitation services.  
**Suggested Data Collection Question:** Was the patient assessed for and/or did the patient receive rehabilitation services?  
**Format:** Alphanumeric  
**Allowable Values:**  
- Y (Yes, patient was assessed for or received rehabilitation services)  
- N (No, patient was not assessed for or received rehabilitation services, OR unable to determine from medical record documentation)  

**Notes for Abstraction:** Documentation in the medical record must address rehabilitation services. Examples of this may include items noted in the Guidelines for Abstraction below.

**Suggested Data Sources:**  
- Physician orders  
- Progress notes  
- Consultant reports  
- Referral forms  
- Rehabilitation records  
- Clinical logs

**Guidelines for Abstraction:**

<table>
<thead>
<tr>
<th>Inclusion</th>
<th>Exclusion</th>
</tr>
</thead>
</table>
| - Consult by rehabilitation services  
| - Assessment/treatment by members of the rehabilitation team  
| - Patient received rehabilitation services during hospitalization  
| - Patient transferred to rehabilitation facility  
| - Patient referred to rehabilitation services following discharge  
| - Specific documentation that patient was assessed and reasons patient ineligible to receive rehabilitation services (e.g., symptoms resolved, patient returned to prior level of function, poor prognosis, patient unable to tolerate rehabilitation therapeutic regimen)  
| - Patient/family refused rehabilitation services  
| | Request for consultation for rehabilitation services that was not performed |
Examples of members of a rehabilitation team may include but are not limited to:

- Physiatrist
- Neuro-psychologist
- Physical therapist
- Occupational therapist
- Speech and language pathologist
Data Element Name: *Atrial Fibrillation/Flutter*

Collected For: DSC/Stroke-03: Patients with Atrial Fibrillation/Flutter Receiving Anticoagulation Therapy

Definition: The patient has a history of any atrial fibrillation (i.e., remote, persistent, or paroxysmal), or atrial flutter in the past or currently as documented in the medical record, 
OR
atrial fibrillation/flutter or paroxysmal atrial fibrillation (PAF) is present during this admission as evidenced by EKG 
OR
by “Other” ICD-9-CM code of 427.31 or 427.32

Suggested Data Collection Question: Does documentation in the medical record indicate that atrial fibrillation/flutter or a history of atrial fibrillation/flutter was present?

Format: Alphanumeric

Allowable Values: Y (Yes) Atrial fibrillation or history of atrial fibrillation/flutter was present  
N (No) No, atrial fibrillation/flutter or history of atrial fibrillation/flutter was not present, or unable to determine from medical record documentation)

Notes for Abstraction: Any one of the conditions described in the definition statement can be present for the patient to meet this data element.

Patients who have a history of self-limited episode of documented atrial fibrillation or flutter that terminated within 8 weeks following CABG would not meet this data element.

Patients who have a transient and entirely reversible episode of atrial fibrillation or flutter due to thyrotoxicosis would not meet this data element.

Suggested Data Sources: - EKG report  
- History and physical  
- Progress notes  
- Holter monitor report

Guidelines for Abstraction:

<table>
<thead>
<tr>
<th>Inclusion</th>
<th>Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistent atrial fibrillation</td>
<td>History of self-limited episode of documented atrial fibrillation or flutter that terminated within 8 weeks</td>
</tr>
<tr>
<td>Paroxysmal atrial fibrillation</td>
<td></td>
</tr>
<tr>
<td>PAF</td>
<td>History of any episode of documented atrial fibrillation or flutter lasting greater than 30 seconds except w/in 8 wks following CABG</td>
</tr>
</tbody>
</table>
Data Element Name: Birthdate

Collected For: All records

Definition: The month, day, and year the patient was born.

Suggested Data Collection Question: What is the patient's day of birth?

Format: MM-DD-YYYY

Allowable Values: MM = Month (0-12)
DD = Day (01-31)
YYYY = Year (1880 – 9999)

Notes for Abstraction: Because this data element is critical in determining the population for all measures, the abstractor should NOT assume the UB-04 claim information for the birthdate is correct. If the abstractor determines through chart review that the UB-04 day is incorrect, she/he should correct and override the downloaded value. If the abstractor is unable to determine the correct birthdate through chart review, she/he should default to the UB-04 date of birth.

Suggested Data Sources: - Emergency department record
- Face sheet
- Registration form
- UB-04, (previously UB-92)

Guidelines for Abstraction:

<table>
<thead>
<tr>
<th>Inclusion</th>
<th>Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>
Data Element Name:  
*Case Identifier*

Collected For:  
All records

Definition:  
A number that uniquely identifies an episode of care. This identification number should be used in order to allow the health care organization to link this Case Identifier to a specific record for purposes of performance measurement.

Suggested Data Collection Question:  
What is the unique number that identifies this episode of care?

Format:  
Numeric

Allowable Values:  
Value greater than zero (0)

Notes for Abstraction:  
None

Suggested Data Sources:

Guidelines for Abstraction:

<table>
<thead>
<tr>
<th>Inclusion</th>
<th>Exclusion</th>
</tr>
</thead>
</table>
Data Element Name: *Cholesterol Reducing Therapy Prior To Hospitalization*

Collected For: DSC Stroke-06: Discharged on Statin Medication

Definition: Documentation that a prescribed cholesterol reducing therapy was taken regularly prior to current hospitalization. Cholesterol reducing therapy works by blocking the action of an enzyme in the liver which is needed to make cholesterol, thereby decreasing the level of cholesterol circulating in the blood.

Suggested Data Collection Question: Was the patient on cholesterol reducing therapy prior to this hospitalization?

Format: Alphanumeric

Allowable Values:

- **Y** (Yes, Patient was on cholesterol lowering therapy prior to this hospitalization)
- **N** (No, Patient was not on cholesterol lowering therapy prior to hospitalization or unable to determine from medical record documentation)

Notes for Abstraction: Evidence in the medical record of a medication in the cholesterol lowering class at a given dosage and frequency of administration is adequate to answer “Yes” to this data element.

If documentation in the medical record indicates that cholesterol reducing therapy has been prescribed but patient has not filled the prescription or is otherwise noncompliant, answer “No” to this data element.

Suggested Data Sources:
- Admission notes
- History and physical
- Medication administration record
- Medication reconciliation records
- Nursing admission assessment
- Progress notes

Guidelines for Abstraction:

<table>
<thead>
<tr>
<th>Inclusion</th>
<th>Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refer to Appendices, Table 3 for a comprehensive list of cholesterol reducing drugs.</td>
<td>None</td>
</tr>
</tbody>
</table>
Data Element Name:  *Comfort Measures Only*

Collected For:  All records

Definition:  Physician/advanced practice nurse/physician assistant (physician, APN, PA) documentation the patient was receiving comfort measures only. Commonly referred to as “palliative care” in the medical community and “comfort care” by the general public. Palliative care includes attention to the psychological and spiritual needs of the patient and support for the dying patient and the patient’s family. Usual interventions are not received because a medical decision was made to limit care to comfort measures only. Comfort Measures Only are not equivalent to the following: Do Not Resuscitate (DNR), living will, no code, no heroic measure.

Suggested Data Collection Question:  Is there physician/advanced practice nurse/physician assistance documentation the patient was receiving comfort measures only?

Format:

Allowable Values:  

Y (Yes)  
There is physician/advanced practice nurse/physician assistant documentation that the patient was receiving comfort measures anytime during the hospital stay.

N (No)  
There is no documentation the patient was receiving comfort measures only or unable to determine from medical record documentation

Notes for Abstraction:  
If the only mention of comfort measures or hospice is at discharge, select “No” for the answer.

If DNR-CC is documented, select “No” unless there is documented clarification that CC stands for “comfort care”

If any of the inclusions are documented select “Yes” regardless of other documentation.

If “continue supportive care” is documented in the context of a patient’s age, chronic illness or terminal/grave prognosis, select “Yes”.

If “comfort measures only” is documented by the end of hospital day two, select “Yes” for measures STK-1: DVT Prophylaxis and STK-5: Antithrombotic Therapy By End of Hospital Day Two. Documentation of comfort measures later than hospital day two = “No”.
**Suggested Data Sources:** PHYSICIAN/ADVANCED PRACTICE NURSE/PHYSICIAN ASSISTANT DOCUMENTATION ONLY
- Admitting physician orders
- Consultation notes
- Emergency Department record
- History and physical
- Physician admitting note
- Physician orders
- Progress notes

**Guidelines for Abstraction:**

<table>
<thead>
<tr>
<th>Inclusion</th>
<th>Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comfort measures only</td>
<td>Chemical code only</td>
</tr>
<tr>
<td>Comfort measures provided</td>
<td>DNR</td>
</tr>
<tr>
<td>Hospice care</td>
<td>Do not cardiovert</td>
</tr>
<tr>
<td>Maintain treatment for comfort, terminal care</td>
<td>Do not defibrillate</td>
</tr>
<tr>
<td>Palliative care</td>
<td>Do not intubate (DNI)</td>
</tr>
<tr>
<td>Physician documentation that care is limited at family’s request due to patient’s age or chronic illness or patient’s conditions is grave or that death is imminent</td>
<td>Living will</td>
</tr>
<tr>
<td>Supportive care only</td>
<td>NCR</td>
</tr>
<tr>
<td></td>
<td>No antiarrhythmic therapy</td>
</tr>
<tr>
<td></td>
<td>No artificial respirations</td>
</tr>
<tr>
<td></td>
<td>No cardiac monitoring</td>
</tr>
<tr>
<td></td>
<td>No chest compressions</td>
</tr>
<tr>
<td></td>
<td>No code</td>
</tr>
<tr>
<td></td>
<td>No code 99</td>
</tr>
<tr>
<td></td>
<td>No heroic or aggressive measures</td>
</tr>
<tr>
<td></td>
<td>No intubation and/or ventilation</td>
</tr>
<tr>
<td></td>
<td>No invasive procedures</td>
</tr>
<tr>
<td></td>
<td>No other protocols associated with advanced cardiac life support</td>
</tr>
<tr>
<td></td>
<td>No resuscitative medication</td>
</tr>
<tr>
<td></td>
<td>No resuscitative measures (NRM)</td>
</tr>
<tr>
<td></td>
<td>No vasopressors</td>
</tr>
</tbody>
</table>
Data Element Name: *Date IV Thrombolytic Therapy Administered At This Hospital*

Collected For: DSC/Stroke-04: IV Thrombolytic Therapy Administered

Definition: The month, day, and year that IV thrombolytic therapy was initiated to a patient with ischemic stroke

Suggested Data Collection Question: What is the date that IV thrombolytic therapy was initiated for this patient at this hospital?

Format: MM-DD-YYYY

Allowable Values:

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MM</td>
<td>Month (01 – 12)</td>
</tr>
<tr>
<td>DD</td>
<td>Day (01 – 31)</td>
</tr>
<tr>
<td>YYYY</td>
<td>Year (2000 – 9999)</td>
</tr>
</tbody>
</table>

Notes for Abstraction: This data element applies only to patients for whom IV thrombolytic therapy was initiated at this hospital. Do not abstract this data element if IV thrombolytic therapy was initiated at another hospital and patient was subsequently transferred to this hospital.

IV t-PA is the only FDA-approved IV thrombolytic therapy.

Suggested Data Sources:

- Medication records
- Emergency department records
- Progress notes

Guidelines for Abstraction:

<table>
<thead>
<tr>
<th>Inclusion</th>
<th>Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Data Element Name: *Date Last Known Well*

Collected For: Stroke-04: IV Thrombolytic Therapy Administered

Definition: The date at which the patient was last known to be without the signs and symptoms of the current stroke or at his or her prior baseline.

Suggested Data Collection Question: What was the date at which the patient was last known to be well or at his or her baseline?

Format: MM-DD-YYYY

Allowable Values:
- MM = Month (01 – 12)
- DD = Day (01 – 31)
- YYYY = Year (2000 – 9999)

Notes for Abstraction: For patients with a witnessed onset of symptoms, the date of last known well and the date of symptom discovery will be the same.

Suggested Data Sources:
- Emergency Department records
- History and Physical
- Progress notes

Guidelines for Abstraction:

<table>
<thead>
<tr>
<th>Inclusion</th>
<th>Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

25 of 67
Data Element Name: Discharge Date

Collected For: All records

Definition: The month, day and year the patient was discharged from acute care, left against medical advice, or expired during this stay.

Suggested Data Collection Question: What is the date the patient was discharged from acute care, left against medical advice (AMA) or expired?

Format: MM-DD-YYYY

Allowable Values:
- MM = Month (01 – 12)
- DD = Day (01 – 31)
- YYYY = Year (2000 – 9999)

Notes for Abstraction: Because this data element is critical in determining the population for all measures, the abstractor should NOT assume the UB-04 claim information for the discharge date is correct. If the abstractor determines through chart review that the UB-04 day is incorrect, she/he should correct and override the downloaded value. If the abstractor is unable to determine the correct discharge date through chart review, she/he should default to the UB-04 date.

Suggested Data Sources:
- Discharge summary
- Face sheet
- Nursing discharge notes
- Physician orders
- Progress notes
- Transfer note
- UB-04, (previously UB-92)

Guidelines for Abstraction:

<table>
<thead>
<tr>
<th>Inclusion</th>
<th>Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>
### Data Element Name:
*Discharge Status*

### Collected For:
All Records

### Definition:
The place or setting to which the patient was discharged

### Suggested Data Collection Question:
What was the patient's discharge disposition?

### Format:

<table>
<thead>
<tr>
<th>Allowable Values</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Discharged to home care or self care (routine discharge)</td>
</tr>
<tr>
<td>02</td>
<td>Discharged/transferred to another short term general hospital for inpatient care</td>
</tr>
<tr>
<td>03</td>
<td>Discharged/transferred to a skilled nursing facility (SNF) with Medicare certification</td>
</tr>
<tr>
<td>04</td>
<td>Discharged/transferred to an intermediate care facility</td>
</tr>
<tr>
<td>05</td>
<td>Discharged/transferred to another type of health care institution (not defined elsewhere in this code list) for inpatient care. <em>Usage note:</em> Cancer hospitals excluded from PPS and children’s hospitals are examples of such other types of health care institutions.</td>
</tr>
<tr>
<td>06</td>
<td>Discharged/transferred to home under care of organized home health service organization</td>
</tr>
<tr>
<td>07</td>
<td>Left against medical advice or discontinued care</td>
</tr>
<tr>
<td>20</td>
<td>Expired</td>
</tr>
<tr>
<td>43</td>
<td>Discharged/transferred to a federal health care facility <em>Usage note:</em> Discharges and transfers to a government operated health care facility such as a Department of Defense hospital, a Veteran’s Administration hospital or a Veteran’s Administration nursing facility. To be used whenever the destination at discharge is a federal health care facility, whether the patient resides there or not.</td>
</tr>
<tr>
<td>50</td>
<td>Hospice – home</td>
</tr>
<tr>
<td>51</td>
<td>Hospice – medical facility</td>
</tr>
<tr>
<td>61</td>
<td>Discharged/transferred to hospital-based Medicare approved swing bed <em>Usage note:</em> Medicare-used for reporting patients discharged/transferred to a SNF level of care within a hospital’s approved swing bed arrangement.</td>
</tr>
<tr>
<td>62</td>
<td>Discharged/transferred to an inpatient rehabilitation facility (IRF) including rehabilitation distinct part units of a hospital</td>
</tr>
<tr>
<td>63</td>
<td>Discharged/transferred to a Medicare certified long term care hospital (LTCH)</td>
</tr>
</tbody>
</table>
64 Discharged/transferred to a nursing facility certified under Medicaid but not certified under Medicare
65 Discharged/transferred to a psychiatric hospital or psychiatric distinct part unit of a hospital
66 Discharged/transferred to a Critical Access Hospital (CAH)
70 Discharged/transferred to another Type of Health Care Institution not Defined Elsewhere in this Code List (See Code 05)

Notes for Abstraction:
- The values for Discharge Status are taken from the National Uniform Billing Committee Manual (NUBC) manual which is used by the billing/HIM to complete the UB-04.
- Because this data element is critical in determining the population for many measures, the abstractor should NOT assume that the UB-04 value is what is reflected in the medical record. For abstraction purposes, it is important that the medical record reflect the appropriate discharge status. If the abstractor determines through chart review that the UB-04 discharge status is not what is reflected in the medical record, she/he should correct and override the downloaded value.
- It would be appropriate to work with your billing office to develop processes that can be incorporated to improve medical record documentation to support the appropriate discharge status and to ensure consistency between the UB-04 discharge status and the medical record.

If state assigned codes are used, it is the organization’s responsibility to ensure that one of the allowable values listed is used.

While there are additional UB-04 values for this data element, they are used for these measures at this time.

Suggested Data Sources: Discharge instruction sheet
Discharge summary
Face sheet
Nursing discharge notes
Physician orders
Progress notes
Social service notes
Transfer record
UB-04, (previously UB-92)

Guidelines for Abstraction:

<table>
<thead>
<tr>
<th>Inclusion</th>
<th>Exclusion</th>
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</tbody>
</table>
Data Element Name: **DVT Prophylaxis Initiated by End of Hospital Day 2**

Collected For: DSC/Stroke-01: Deep Vein Thrombosis (DVT) Prophylaxis

Definition: The administration of a defined DVT prophylaxis strategy was initiated by the end of hospital day 2.

Suggested Data Collection Question: Was DVT prophylaxis initiated by the end of hospital day 2?

Format: Alphanumeric

Allowable Values:
- **Y** (Yes, DVT prophylaxis was initiated by the end of hospital day 2)
- **N** (No, DVT prophylaxis was not initiated by the end of hospital day 2, OR unable to determine from medical record documentation)
- **NC** (No, DVT prophylaxis was not initiated by the end of hospital day 2. A documented reason for not administering DVT prophylaxis exists)

Notes for Abstraction:
To compute end of hospital day two, count the arrival date as hospital day one. If DVT prophylaxis was administered by 11:59 PM of hospital day two, answer “Yes” for this data element. E.g, Patient arrives Monday 05:00, DVT prophylaxis must be initiated before 23:59 on Tuesday; if patient arrives at 23:30 on Monday, DVT prophylaxis must be initiated by 23:59 on Tuesday.

Reasons for not prescribing DVT prophylaxis must be documented by a physician, advanced practice nurse or physician assistant (physician/APN/PA). If reasons are not mentioned in the context of DVT prophylaxis, do not make inferences.

If documentation indicates that patient/caregiver refused DVT prophylaxis, choose “NC”.

Suggested Data Sources:
- Medication records
- Physician orders
- Progress notes
- Clinical logs
- Flow charts.

Guidelines for Abstraction:

<table>
<thead>
<tr>
<th>Inclusion</th>
<th>Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>DVT Prophylaxis</td>
<td>TED hose</td>
</tr>
<tr>
<td>Low-dose, subcutaneous (sub-Q),</td>
<td>Compression socks</td>
</tr>
<tr>
<td>unfractionated (&quot;regular&quot;) heparin</td>
<td></td>
</tr>
<tr>
<td>Low Molecular Weight (LMW) heparin (enoxaparin, dalteparin, nadroparin) Alternative anticoagulants (danaparoid, hirudin, bivalirudin, other heparinoids) Intravenous heparin, IV heparin Pneumatic compression stockings, sequential compression devices, SCDs Already receiving anticoagulation, e.g., admitted on Coumadin and remains on Coumadin Warfarin (Coumadin) Warfarin Sodium Pneumoboots Venodynes</td>
<td></td>
</tr>
</tbody>
</table>
Data Element Name: *Dysphagia Screen*

Collected For: DSC/Stroke-07: Dysphagia Screening

Definition: Stroke patients should be screened for dysphagia before being given any oral intake including food, fluids, or medications.

Suggested Data Collection Question: Was the patient screened for dysphagia before being given any oral intake, including food, fluids or medications?

Format: Alphanumeric

Allowable Values: Y (Yes, patient was screened for dysphagia before being given any oral intake including food, fluids or medications by mouth)

N (No, patient was not screened for dysphagia before being given any oral intake including food, fluids or medications by mouth, OR unable to determine from medical record documentation)

NC (No, patient was not screened for dysphagia before being given any oral intake including food, fluids or medications by mouth. A documented reason exists for not performing this screen.)

Notes for Abstraction: Documentation in the record should indicate that an assessment of the patient’s ability to swallow was completed by a health care professional prior to oral intake of food, fluid, or medications. A screening test need not be a formal evaluation of swallowing by a speech and language pathologist, but should be a standardized method of swallowing assessment accepted by the institution.

Reasons for not performing a dysphagia screen must be explicitly documented by a physician, advanced practice nurse, or physician assistant. If reasons are not mentioned in the context of dysphagia screening, do not make inferences unless documentation explicitly states so.

If dysphagia screen was offered and documentation exists that the patient or caregiver refused, select “NC”.

Suggested Data Sources: - Clinician notes
- Referral/consult notes
- Physician order sheet
- Progress notes
- Flow charts

Guidelines for Abstraction:
Inclusion | Exclusion
---|---
A variety of methods may be employed to assess swallowing status. These methods may include but are not limited to:
- Bedside swallowing assessment
- Simple water swallow test
- Burke water swallow test
- Bedside swallowing assessment
- Simple standardized bedside swallowing assessment (SSA)
- Barium swallow
- Video fluoroscopy
- Double contrast esophagoscopy
- Radio nucleotide studies
- Manometry
- Endoscopy
- Formal evaluation by a speech and language pathologist

Patient evaluation using the NIH/NIHSS (National Institute of Health/National Institute of Health Stroke Scale) is NOT considered dysphagia screening
Documentation of “gag reflex present” or “positive gag” or “cranial nerves intact” without explicit assessment of swallowing is NOT considered dysphagia screening
Data Element Name: *Education Addresses Activation of Emergency Medical System*

Collected For: Stroke-08: Stroke Education

Definition: The medical record should include documentation that patient and/or caregiver received written education and/or resource materials that address the need for activation of the emergency medical system (EMS) if signs or symptoms of stroke occur.

Suggested Data Collection Question: Did the patient or caregiver receive written educational materials regarding the need for activation of the emergency medical system (EMS) if signs or symptoms of stroke occur?

Format: Alphanumeric

Allowable Values:

- **Y** (Yes) The patient or caregiver received written educational and/or resource materials regarding the need for activation of the emergency medical system (EMS) if signs or symptoms of stroke occur.
- **N** (No) The patient or caregiver did not receive written education and/or resource materials regarding the need for activation of the emergency medical system (EMS) if signs or symptoms of stroke occur, OR unable to determine from medical record documentation.
- **NC** (No, the patient or caregiver did not receive written education and/or resource materials regarding the need for activation of the emergency medical system (EMS) if signs or symptoms of stroke occur. The patient is unable to comprehend, and no caregiver is available.)

Notes for Abstraction:

Record documentation must reflect that the patient and/or caregiver received written education and/or electronic resource materials. If the organization uses standardized written materials that contain the required component, i.e., the need for activation of the emergency medical system (EMS) if signs or symptoms of stroke occur, then documentation of receipt of these tools is adequate.

Electronically formatted media such as videos, CDs and DVDs are acceptable for educational materials. Documentation must clearly convey that (1) the need for activation of the emergency medical system (EMS) if signs or symptoms of stroke occur is included in the material, and (2) the patient was given a copy to take home.

If there is documentation that the patient refused education and/or education materials which addressed the need for activation of the emergency medical system (EMS) if signs or symptoms of stroke occur, select “Y”.
The caregiver is defined as the patient's family or any other person (e.g., home health/VNA provider) who will be responsible for care of the patient after discharge.

**Suggested Data Sources:**
- Care plans/clinical pathways
- Progress notes
- Flow charts
- Discharge instruction sheet
- Discharge summary
- Nursing discharge notes
- Physical therapy notes
- Teaching sheet
- Education record

**Guidelines for Abstraction:**

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<tr>
<th>Inclusion</th>
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</table>
Data Element Name: Education Addresses Follow-up After Discharge

Collected For: Stroke-08: Stroke Education

Definition: The medical record should include documentation that patient and/or caregiver received written education and/or resource materials that address the need for continuing medical care after discharge.

Suggested Data Collection Question: Did the patient or caregiver receive written educational materials regarding follow-up after discharge?

Format: Alphanumeric

Allowable Values: Y (Yes) The patient or caregiver received written educational and/or resource materials regarding follow-up after discharge N (No) The patient or caregiver did not receive written education and/or resource materials regarding follow-up after discharge, OR unable to determine from medical record documentation NC (No, the patient or caregiver did not receive written education and/or resource materials regarding follow-up after discharge. The patient is unable to comprehend, and no caregiver is available.)

Notes for Abstraction: Record documentation must reflect that the patient and/or caregiver received written education and/or electronic resource materials. If the organization uses standardized written materials that contain the required component, i.e., follow-up after discharge, then documentation of receipt of these tools is adequate.

Electronically formatted media such as videos, CDs and DVDs are acceptable for educational materials. Documentation must clearly convey that (1) follow-up after discharge is included in the material, and (2) the patient was given a copy to take home.

If there is documentation that the patient refused education and/or education materials which addressed follow-up after discharge, select “Y”.

The caregiver is defined as the patient’s family or any other person (e.g., home health/VNA provider) who will be responsible for care of the patient after discharge.

Suggested Data Sources: - Care plans/clinical pathways - Progress notes - Flow charts - Discharge instruction sheet - Discharge summary
- Nursing discharge notes
- Physical therapy notes
- Teaching sheet
- Education record

**Guidelines for Abstraction:**

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</table>
Data Element Name: *Education Addresses Medications Prescribed At Discharge*

**Collected For:** Stroke-08: Stroke Education

**Definition:** The medical record should include documentation that patient and/or caregiver received education and/or resource materials that address medications prescribed at discharge.

**Suggested Data Collection Question:** Did the patient or caregiver receive education and/or resource materials regarding medications prescribed at discharge?

**Format:** Alphanumeric

**Allowable Values:**
- **Y (Yes)** The patient or caregiver received education regarding medications prescribed at discharge
- **N (No)** The patient or caregiver did not receive education regarding medications prescribed at discharge, OR unable to determine from medical record documentation
- **NC (No, the patient or caregiver did not receive written education and/or resource materials regarding medications prescribed at discharge. The patient is unable to comprehend, and no caregiver is available.)**

**Notes for Abstraction:**
Record documentation must reflect that the patient and/or caregiver received written education and/or electronic resource materials. If the organization uses standardized written materials that contain the required component, i.e., medications, then documentation of receipt of these tools is adequate.

Electronically formatted media such as videos, CDs, and DVDs are acceptable for educational materials. Documentation must clearly convey that (1) medications are included in the material, and (2) the patient was given a copy to take home.

If there is documentation that the patient refused education and/or education materials which addressed medications, select “Yes.”

The caregiver is defined as the patient’s family or any other person (e.g., home health/VNA provider) who will be responsible for care of the patient after discharge.

**Suggested Data Sources:**
- Care plans/clinical pathways
- Progress notes
- Flow charts
- Discharge instruction sheet
- Discharge summary
- Nursing discharge notes
- Physical therapy notes
- Teaching sheet
- Education record

Guidelines for Abstraction:

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</table>
Data Element Name: Education Addresses Risk Factors for Stroke

Collected For: Stroke-08: Stroke Education

Definition: The medical record should include documentation that patient and/or caregiver received education and/or resource materials that address relevant personal risk factors for stroke

Suggested Data Collection Question: Did the patient or caregiver receive education regarding personal risk factors for stroke?

Format: Alphanumeric

Allowable Values:
- Y (Yes) The patient or caregiver received education regarding relevant personal risk factors for stroke
- N (No) The patient or caregiver did not receive education regarding relevant personal risk factors for stroke, OR unable to determine from medical record documentation
- NC (No, the patient or caregiver did not receive written education and/or resource materials regarding relevant personal risk factors for stroke. The patient is unable to comprehend, and no caregiver is available.)

Notes for Abstraction: Record documentation must reflect that the patient and/or caregiver received education and/or electronic resource materials. If the organization uses standardized written materials that contain the required component, i.e., personal risk factors for stroke, then documentation of receipt of these tools is adequate.

Electronically formatted media such as videos, CDs, and DVDs are acceptable for educational materials. Documentation must clearly convey that (1) personal risk factors for stroke are included in the material, and (2) the patient was given a copy to take home. Referral to web-based materials or help-lines would qualify.

If there is documentation that the patient refused education and/or educational materials which addressed the risk factors, select “Y”.

The caregiver is defined as the patient’s family or any other person (e.g., home health/VNA provider) who will be responsible for care of the patient after discharge.

Suggested Data Sources:
- Care plans/clinical pathways
- Progress notes
- Flow charts
- Discharge instruction sheet
- Discharge summary
- Nursing discharge notes
- Physical therapy notes
Guidelines for Abstraction:

<table>
<thead>
<tr>
<th>Inclusion</th>
<th>Exclusion</th>
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<tbody>
<tr>
<td>Personal risk factors for stroke may include but are not limited to:</td>
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<tr>
<td>High blood pressure</td>
<td></td>
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<tr>
<td>Elevated cholesterol</td>
<td></td>
</tr>
<tr>
<td>Diabetes</td>
<td></td>
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<tr>
<td>Overweight (BMI &gt;= 25)</td>
<td></td>
</tr>
<tr>
<td>Physical inactivity</td>
<td></td>
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<tr>
<td>Excessive alcohol consumption</td>
<td></td>
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<tr>
<td>Carotid artery stenosis</td>
<td></td>
</tr>
<tr>
<td>Atrial fibrillation</td>
<td></td>
</tr>
<tr>
<td>Smoking</td>
<td></td>
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</tbody>
</table>
**Data Element Name:** Education Addresses Warning Signs and Symptoms of Stroke

**Collected For:** Stroke-08: Stroke Education

**Definition:** The medical record should include documentation that patient and/or caregiver received education and/or resource materials that address the warning signs and symptoms of stroke.

**Suggested Data Collection Question:** Did the patient or caregiver receive education and/or resource materials regarding the warning signs and symptoms of stroke?

**Format:** Alphanumeric

**Allowable Values:**
- **Y** (Yes) The patient or caregiver received education regarding the warning signs of stroke
- **N** (No) The patient or caregiver did not receive education regarding the warning signs and symptoms of stroke OR unable to determine from medical record documentation
- **NC** (No, the patient or caregiver did not receive written education and/or resource materials regarding the warning signs and symptoms of stroke occur. The patient is unable to comprehend, and no caregiver is available)

**Notes for Abstraction:**
Record documentation must reflect that the patient and/or caregiver received education and/or electronic resource materials. If the organization uses standardized written materials that contain the required component, i.e., warning signs of stroke, then documentation of receipt of these tools is adequate.

Electronically formatted media such as videos, CDs, and DVDs are acceptable for educational materials. Documentation must clearly convey that (1) warning signs and symptoms are included in the material, and (2) the patient was given a copy to take home.

If there is documentation that the patient refused education and/or education materials which addressed warning signs and symptoms, select “Y”.

The caregiver is defined as the patient’s family or any other person (e.g., home health/VNA provider) who will be responsible for care of the patient after discharge.

**Suggested Data Sources:**
- Care plans/clinical pathways
- Progress notes
- Flow charts
- Discharge instruction sheet
- Discharge summary
- Nursing discharge notes
- Physical therapy notes
### Guidelines for Abstraction:

<table>
<thead>
<tr>
<th>Inclusion</th>
<th>Exclusion</th>
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<tbody>
<tr>
<td>Examples of stroke warning signs may include but are not limited to:</td>
<td></td>
</tr>
<tr>
<td>Sudden numbness or weakness of the face, arm or leg, especially on one side of the body</td>
<td></td>
</tr>
<tr>
<td>Sudden confusion, trouble speaking or understanding</td>
<td></td>
</tr>
<tr>
<td>Sudden trouble seeing in one or both eyes</td>
<td></td>
</tr>
<tr>
<td>Sudden trouble walking, dizziness, loss of balance or coordination</td>
<td></td>
</tr>
<tr>
<td>Sudden severe headache with no known cause</td>
<td></td>
</tr>
</tbody>
</table>
Data Element Name: Evidence of Atherosclerosis

Collected For: DSC Stroke-06: Discharged on Statin Medication

Definition: Documentation is present in the medical record that the patient has an atherosclerotic condition.

Suggested Data Collection Question: Is there documentation that the patient exhibited evidence of atherosclerosis?

Format: Alphanumeric

Allowable Values: Y (Yes, documentation indicates that the patient does exhibit evidence of atherosclerosis)
N (No, documentation does not indicate that the patient exhibits evidence of atherosclerosis OR unable to determine from medical record documentation)

Notes for Abstraction: Randomized clinical trials (SPARCL and HPS) support the use of statins in patients with large artery atherosclerotic or small artery branch atherosclerotic (lacunar) stroke. There is no published evidence to recommend the routine use of statins in the treatment of stroke patients who do not have atherosclerosis and do not otherwise qualify for lipid lowering due to other conditions.

If documentation exists that the patient has atherosclerosis, as evidenced by documentation of ANY of the conditions listed in the Inclusion table below, select “Y”.

If documentation exists that the patient has one or more of the conditions listed in the Exclusion table below AND no other documentation of atherosclerosis (e.g., previous history or newly diagnosed evidence of atherosclerosis) is present in the medical record, select “N”.

Documentation of ANY of the conditions listed in the Inclusion table along with one or more documented excluded conditions = “Y”, (e.g. carotid artery atherosclerosis and atrial fibrillation).

Suggested Data Sources:
- Emergency Department record
- History and physical
- Progress notes
- Consultation reports
- Discharge summary
- Face sheet
- Transfer sheet
### Guidelines for Abstraction:

<table>
<thead>
<tr>
<th>Inclusion</th>
<th>Exclusion</th>
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</thead>
<tbody>
<tr>
<td>Carotid stenosis or plaque</td>
<td>Arterial dissection/ Fibromuscular dysplasia</td>
</tr>
<tr>
<td>Vertebral artery stenosis or plaque</td>
<td>Hereditary or acquired hypercoagulability including Antiphospholipid Antibody Syndrome</td>
</tr>
<tr>
<td>Intracranial atherosclerosis</td>
<td>Atrial fibrillation without coronary artery disease</td>
</tr>
<tr>
<td>Small vessel disease</td>
<td>Cardioembolism due to</td>
</tr>
<tr>
<td>Lacunar infarction</td>
<td>- Severe cardiomyopathy with low ejection fraction not due to coronary artery disease</td>
</tr>
<tr>
<td>Artery-to-artery embolism</td>
<td>- Prosthetic heart valves or clinically significant mitral stenosis</td>
</tr>
<tr>
<td>Aortic arch atheroma or plaque</td>
<td>- Bacterial endocarditis</td>
</tr>
<tr>
<td>Coronary artery / coronary heart disease (CAD / CHD)</td>
<td>- Paradoxical embolism due to intracardiac shunt (atrial septal defects, patent foramen ovale)</td>
</tr>
<tr>
<td>Peripheral artery / peripheral vascular disease (PAD / PVD)</td>
<td>Migraine</td>
</tr>
<tr>
<td>Other documentation indicating the presence of atherosclerosis</td>
<td>Sickle cell anemia</td>
</tr>
<tr>
<td></td>
<td>Vasculitis</td>
</tr>
<tr>
<td></td>
<td>Vasospasm or vasoconstriction syndromes</td>
</tr>
<tr>
<td></td>
<td>Moya-moya</td>
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<tr>
<td></td>
<td>Strokes caused by trauma, a revascularization procedure, or subarachnoid hemorrhage</td>
</tr>
</tbody>
</table>
Data Element Name: *Hispanic Ethnicity*

Collected For: All records

Definition: Documentation that the patient is of Hispanic ethnicity or Latino

Suggested Data Collection Question: Is the patient of Hispanic ethnicity or Latino?

Format: Alpha

Allowable Values: Y (Yes)  Patient is of Hispanic ethnicity or Latino  
N (No)    Patient is not of Hispanic ethnicity or Latino OR unable to determine from medical record documentation

Notes for Abstraction: The data element *Race* is required in addition to this data element

Suggested Data Sources: 
- Emergency Department record  
- Face sheet  
- History and physical  
- Nursing admission assessment  
- Progress notes

Guidelines for Abstraction:

<table>
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<tbody>
<tr>
<td>A person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin regardless of race. The term “Spanish origin” can be used in addition to “Hispanic or Latino” Examples: Black-Hispanic Chicano “H” Hispanic Latin American Latino/Latina Mexican-American Spanish White-Hispanic</td>
<td>None</td>
</tr>
</tbody>
</table>
Data Element Name:    *ICD-9-CM Principal Diagnosis Code*

Collected For:        All records

Definition:           The International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) codes associated with the diagnosis of stroke (see Tables 1 and 2 in Appendices)

Suggested Data Collection Question: What was the ICD-9-CM code selected as the principal diagnosis for this record?

Format:

Allowable Values:     Any valid ICD-9-CM diagnosis code

Notes for Abstraction: The principal diagnosis is defined in the Uniform Hospital Discharge Data Set (UHDDS) as "that condition established after study to be chiefly responsible for occasioning the admission of the patient to the hospital for care."

Suggested Data Sources: Discharge summary
                        Face sheet
                        UB-04, (previously UB-92)

Guidelines for Abstraction:

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<tbody>
<tr>
<td>Refer to Appendices for ICD-9-CM Code Tables</td>
<td></td>
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</tbody>
</table>
**Data Element Name:** IV Thrombolytic Therapy Administered

**Collected For:** DSC/Stroke-04: IV Thrombolytic Therapy Administered

**Definition:** The patient received intravenous (IV) thrombolytic therapy at this hospital during this hospitalization.

**Suggested Data Collection Question:** Does documentation exist in the medical record stating that the patient received IV thrombolytic therapy at this hospital during the present hospitalization?

**Format:** Alphanumeric

**Allowable Values:**
- **Y** (Yes, IV thrombolytic was administered in this hospital during this hospitalization)
- **N** (No, IV thrombolytic was not administered in this hospital during this hospitalization, OR unable to determine from medical record documentation)
- **NC** (No, IV thrombolytic was not administered in this hospital during this hospitalization. A documented reason exists for not administering this therapy)

**Notes for Abstraction:**
This data element applies only to patients for whom IV thrombolytic therapy was initiated at this hospital. Do not abstract this data element if IV thrombolytic therapy was initiated at another hospital and patient was subsequently transferred to this hospital.

Reasons for not administering IV thrombolytic therapy must be explicitly documented by a physician, advanced practice nurse or physician assistant (physician/APN/PA). Conditions or factors making the administration of IV thrombolytic inadvisable, inappropriate and/or undesirable are documented. Such conditions may include:

**Contraindications**
- IV or IA t-PA given at outside hospital
- Systolic blood pressure > 185 or diastolic blood pressure > 110 mm hg.
- Suspicion of subarachnoid hemorrhage
- CT findings (intracranial hemorrhage, subarachnoid hemorrhage, or major infarct signs)
- Seizure at onset
- Recent surgery/trauma (<15 days)
- Recent intracranial or spinal surgery, head trauma, or stroke (<3 mo.)
- History of intracranial hemorrhage or brain aneurysm or vascular malformation or brain tumor
- Active internal bleeding (<22 days)
- Platelets <100,000, PTT > 40 sec after heparin use, or PT > 15 or INR > 1.7, or unknown bleeding diathesis
- No IV access
- Care-team unable to determine eligibility
- Pt./Family refused

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

If reasons are not mentioned in the context of thrombolytics, do not make inferences (e.g., do not assume that thrombolytics are not being administered due to recent intracranial surgery unless documentation explicitly states so.)

Currently, t-PA is the only FDA-approved IV thrombolytic.

Suggested Data Sources:  Emergency room records
Medication records
Progress notes
Transfer forms

Guidelines for Abstraction:

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<tbody>
<tr>
<td>IV t-PA</td>
<td>Intra-arterial (IA) t-PA</td>
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<td>Activase</td>
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</table>
Data Element Name: LDL ≥ 100 mg/dL

Collected For: DSC Stroke-06: Discharged on Statin Medication

Definition: The patient’s LDL level was ≥ 100 mg/dL in the first 48 hours of hospitalization

Suggested Data Collection Question: Was the patient’s highest LDL level ≥ 100 mg/dL in the first 48 hours of hospitalization or within the past 30 days?

Format: Alphanumeric

Allowable Values: Y (Yes, LDL ≥ 100 in the first 48 hours of hospitalization or in the past 30 days)
N (No, LDL < 100 in the first 48 hours of hospitalization or in the past 30 days OR unable to determine from medical record documentation)

Notes for Abstraction: For this measurement, look for the highest level in the first 48 hours after admission or if available as a fasting sample within the past 1 month. The cholesterol levels drawn in the first 48 hours after admission do not have to be fasting values.

Total cholesterol measurement is not adequate to answer “Yes” to this data element. If only total cholesterol measurement is documented in the medical record, answer “N”.

Suggested Data Sources: Laboratory reports
Progress notes

Guidelines for Abstraction:

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</table>
Data Element Name:  LDL Measured

Collected For:  DSC Stroke-06: Discharged on Statin Medication

Definition:  Documentation of an LDL level measured within the first 48 hours of hospitalization or in the past 30 days is present in the medical record

Suggested Data Collection Question:  Was the patient’s LDL level measured within the first 48 hours of hospitalization or in the past 30 days?

Format:  Alphanumeric

Allowable Values:  
Y  (Yes, LDL was measured within the first 48 hours of hospitalization or in the past 30 days)
N  (No, LDL was not measured within the first 48 hours of hospitalization or in the past 30 days OR unable to determine from medical record documentation)

Notes for Abstraction:  For this measurement, look for the highest level in the first 48 hours after admission or if available as a fasting sample within the past 30 days. The cholesterol levels drawn in the first 48 hours after admission do not have to be fasting values.

Total cholesterol measurement is not adequate to answer “Yes” to this data element. If only total cholesterol measurement is documented in the medical record, answer “N”.

Suggested Data Sources:  Laboratory reports
Progress notes

Guidelines for Abstraction:

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Data Element Name: NPO (Nothing by Mouth) For Entire Hospital Stay

Collected For: Stroke-07: Dysphagia Screening

Definition: There is documentation to demonstrate that the patient has had NO oral intake of food, fluid, or medications for the entire hospitalization.

Suggested Data Collection Question: Was the patient NPO throughout the entire hospital stay?

Format: Alphanumeric

Allowable Values: Y (Yes, the patient was NPO throughout the entire hospital stay.)
N (No, the patient was not NPO throughout the entire hospital stay OR unable to determine from medical record documentation)

Notes for Abstraction: Answer “Yes” for this data element only if the patient was kept NPO during the entire hospitalization and was discharged/transferred/deceased NPO. This response should not be used in any other circumstances.

The delivery of food, fluid, or medication via a nasogastric tube, orogastric tube, or percutaneous gastrostomy tube should be independent of the assessment of NPO.

Suggested Data Sources: - Progress notes
- Nurses notes
- Physician orders
- Dietitian notes
- Speech pathology notes
- Discharge summary

Guidelines for Abstraction:

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<th>Exclusion</th>
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<tbody>
<tr>
<td>NPO</td>
<td></td>
</tr>
<tr>
<td>Nothing by mouth</td>
<td></td>
</tr>
<tr>
<td>Nulle Per Os</td>
<td></td>
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</table>
Data Element Name: Patient Ambulatory at End of Hospital Day Two

Collected For: DSC/Stroke-01: Deep Vein Thrombosis (DVT) Prophylaxis

Definition: Documentation in the medical record indicates that the patient was ambulatory by the end of hospital day two

Suggested Data Collection Question: Was the patient ambulatory at the end of hospital day two?

Format: Alphanumeric

Allowable Values: Y (Yes, the patient was ambulatory at the end of hospital day two)
N (No, the patient was not ambulatory at the end of hospital day two OR unable to determine from medical record documentation)

Notes for Abstraction:

Ambulatory:
- Patient ambulating without assistance (no help from another person)
- Patient ambulating throughout the day with assistance of another person or assistive device
- Patients ambulating to and from the bathroom throughout the day with or without assistance of another person or assistive device.

Non-ambulatory:
- Patient is on bed rest
- Patient is only transferred/getting out of bed to the bedside commode (or up in chair/bed chair) and is primarily in the bed (or immobile) on the 2nd hospital day

If unable to determine from documentation consider this patient non-ambulatory

To compute end of hospital day two, count the arrival date as hospital day one. If the patient was ambulating by 11:59 PM of hospital day two, answer “Yes” for this data element. E.g., Patient arrives Monday 05:00, patient must be ambulatory before 23:59 on Tuesday; if patient arrives at 23:30 on Monday, patient must be ambulatory by 23:59 on Tuesday

Suggested Data Sources:
- Progress notes
- History and physical
- Nursing assessment
- Nurses notes

Guidelines for Abstraction:

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</table>
Data Element Name:  *Patient Discharged on Anticoagulation Therapy*

Collected For:  Stroke-03  Patients with Atrial Fibrillation/Flutter Receiving Anticoagulation Therapy

Definition:  Patient was prescribed anticoagulation therapy at time of hospital discharge

Suggested Data Collection Question:  Does documentation indicate that the patient was discharged with a prescription for anticoagulation therapy?

Format:  Alphanumeric

Allowable Values:  
- **Y** (Yes, the patient was discharged on anticoagulation therapy)
- **N** (No, the patient was not discharged on anticoagulation therapy or unable to determine from medical record documentation)
- **NC** (No, anticoagulation therapy was not prescribed at discharge. A documented reason for not prescribing anticoagulation therapy exists)

Notes for Abstraction:  
Documentation that demonstrates that patient/caregiver was given prescription for anticoagulation therapy at time of hospital discharge.

Reasons for not prescribing anticoagulation therapy must be documented by a physician, advanced practice nurse or physician assistant (physician/APN/PA). If reasons are not mentioned in the context of anticoagulation therapy, do not make inferences.

If documentation indicates that patient/caregiver refused prescription for anticoagulation therapy at discharge, choose “NC”.

Suggested Data Sources:  
- Pharmacy/medication records
- Physician orders
- Clinical logs
- Discharge instructions

Guidelines for Abstraction:

<table>
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</table>
| Examples of anticoagulation therapy include:  
  Warfarin/Coumadin
  Heparin/heparinoids
  Other anticoagulants, e.g., Lepirudin  | Patients who are discharged only on low doses (5000 units subQ bid) of heparin or equivalent doses for DVT prophylaxis using LMWH |
**Data Element Name:** Patient Received IV/IA Thrombolytic Therapy  
**Collected For:** DSC/Stroke-5: Antithrombotic Therapy Administered by End of Hospital Day Two  
**Definition:** There is documentation in the record that the patient received intravenous (IV) or intra-arterial (IA) thrombolytic therapy at your hospital or another transferring hospital  
**Suggested Data Collection Question:** Did the patient receive IV/IA thrombolytic therapy?  
**Format:** Alphanumeric  
**Allowable Values:**  
- Y (Yes, patient received IV or IA thrombolytic therapy)  
- N (No, patient did not receive IV or IA thrombolytic therapy, OR unable to determine from medical record documentation)  
**Notes for Abstraction:** Documentation in the medical record must reflect that the patient received IV or IA thrombolytic therapy at your hospital or another transferring hospital (i.e., drip and ship). Examples of this may include items noted in the Guidelines for Abstraction below.  
**Suggested Data Sources:**  
- Emergency room records  
- Medication records  
- Progress notes  
- Transfer forms  

**Guidelines for Abstraction:**

<table>
<thead>
<tr>
<th>Inclusion</th>
<th>Exclusion</th>
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<tbody>
<tr>
<td>IV t-PA</td>
<td></td>
</tr>
<tr>
<td>Intra-arterial (IA) t-PA</td>
<td></td>
</tr>
<tr>
<td>Activase</td>
<td></td>
</tr>
</tbody>
</table>
Data Element Name:  *Point of Origin for Admission or Visit*

Collected For:  All records

Definition:  A code indicating the point of patient origin for this admission.

Suggested Data Collection Question:  What was the point of origin for this admission?

Format:

- Length:  1
- Type:  Alphanumeric
- Occurs:  1

Allowable Values:

1. **Non-Health Care Facility Point of Origin**
   The patient was admitted to this facility upon order of a physician.
   Usage Note:  Includes patients coming from home, a physician's office, or workplace.

2. **Clinic**
   The patient was admitted to this facility as a transfer from a freestanding or non-freestanding clinic.

4. **Transfer From a Hospital (Different Facility)**
   The patient was admitted to this facility as a hospital transfer from an acute care facility where he or she was an inpatient or outpatient.
   Usage Note:  Excludes Transfers from Hospital Inpatient in the Same Facility (See Code D).

5. **Transfer from a Skilled Nursing Facility (SNF) or Intermediate Care Facility (ICF)**
   The patient was admitted to this facility as a transfer from a SNF or ICF where he or she was a resident.

6. **Transfer from another Health Care Facility**
   The patient was admitted to this facility as a transfer from another type of health care facility not defined elsewhere in this code list.

7. **Emergency Room**
   The patient was admitted to this facility after receiving services in this facility’s emergency room.
   Usage Note:  Excludes patients who came to the emergency room from another health care facility.

8. **Court/Law Enforcement**
   The patient was admitted to this facility upon the direction of court of law, or upon the request of a law enforcement agency.
   Usage Note:  Includes transfers from incarceration facilities.
9 Information not Available
The means by which the patient was admitted to this hospital is unknown.

D Transfer from One Distinct Unit of the Hospital to another Distinct Unit of the Same Hospital Resulting in a Separate Claim to the Payer
The patient was admitted to this facility as a transfer from hospital inpatient within this hospital resulting in a separate claim to the payer.
Usage Note: For purposes of this code, “Distinct Unit” is defined as a unique unit or level of care at the hospital requiring the issuance of a separate claim to the payer. Examples could include observation services, psychiatric units, rehabilitation units, a unit in a critical access hospital, or a swing bed located in an acute hospital.

E Transfer from Ambulatory Surgery Center
The patient was admitted to this facility as a transfer from an ambulatory surgery center.

F Transfer from Hospice and is Under a Hospice Plan of Care or Enrolled in a Hospice Program
The patient was admitted to this facility as a transfer from hospice.

Notes for Abstraction:
(The abstractor should NOT assume that the UB-04 claim information for the admission date is correct. If the abstractor determines through chart review that the UB-04 date is incorrect, she/he should correct and override the downloaded value. If the abstractor is unable to determine the correct admission date though chart review, she/he should default to the UB-04 admission date.

The intent of this data element is to focus on patients’ place or point of origin rather than the source of a physician order or referral.
The point of origin is the direct source for the particular facility.

Example 1:
A SNF patient experiences sudden right-sided numbness and weakness of the extremities and is taken to the emergency department of Hospital A where it is determined that she is suffering an acute ischemic stroke. The patient is then transferred to Hospital B for admission as an inpatient. The Point of Origin for Hospital A would be 5 – Transfer from a Skilled Nursing Facility (SNF) or Intermediate Care Facility (ICF); the point of origin code for Hospital B would be 4 – Transfer from a Hospital.

Example 2:
An acute ischemic stroke patient was taken to the emergency department of Hospital A by EMTs, then transferred to Hospital B where he receives additional treatment in the ED, and then is admitted as an inpatient to Hospital B. The Point of Origin code for Hospital A is 7 – Emergency Room; the point of origin for Hospital B would be 4 – Transfer from a Hospital. The emergency room code is limited to patients who receive unscheduled emergency services in the ED not originating from another health care facility. As in the example above, a patient brought to the ED would be coded as 7 since the patient was not previously at any other kind of health care facility. Code 7 also includes self-referrals in emergency situations that require immediate medical attention.

**Usage Notes/Cases:**

I. Transfers – From an Another Facility

**Overall Scenario**
While at another acute care hospital/facility, the patient is seen by the emergency room physicians. The patient is then transferred to our facility through the emergency room.

The Point of Origin code would be Code 4 – Transfer from a Hospital (Different Facility) due to the patient being seen at the other acute care facility’s emergency room.

If the decision to admit was not made by the other facility’s emergency room personnel and instead was made by our facilities emergency room doctor, the Point of Origin code would still be 4. Even though the decision to admit was not made by the other facility, the patient was still seen by the other facility’s emergency room personnel and a decision to transfer was made by them.

The patient is seen by the other facility’s emergency room physician; the patient arrives at our emergency room, but receives no additional emergency room care at our facility. Instead, the patient is transferred immediately to the Stroke Unit of our facility, the Point of Origin code would still be 4. Since the patient is seen by a different hospital’s emergency room personnel, the decision to transfer the patient is first made by the other facility. The arrival of the patient at the receiving hospital’s emergency room and subsequent transfer to the Stroke Unit is secondary to the transfer from the previous facility transfer.

II. Transfers – Skilled Nursing Facility

**Overall Scenario**
A resident from a skilled nursing facility is taken to an acute care hospital for medical care.

The Point of Origin code would be Code 5 – Transfer from a Skilled Nursing Facility.

The patient’s family stopped by to pick-up the patient for a routine doctor’s office visit (regularly scheduled); but while at the doctor’s office the doctor sends the patient to the emergency room of the acute care hospital. The Point of Origin code would be 5 as the original Point of Origin is the skilled nursing facility. The
III. Transfer by Law Enforcement or Court

Overall scenario
A patient arrives at the health care facility accompanied by police.
The Point of Origin code would be Code 8 – Court/Law Enforcement as the patient is under the supervision of law enforcement.

If the patient was simply transported by law enforcement to our facility, the patient is neither under arrest nor serving any jail time, then the Point of Origin code would be 7 – Emergency Room. Law enforcement is simply transporting the patient for emergency/urgent care treatment. The patient is not incarcerated (that is, neither under arrest nor serving any jail time).

Suggested Data Sources:
- Emergency department record
- Face sheet
- History and physical
- Nursing admission notes
- Progress notes
- UB-04, Field Location: 15

Guidelines for Abstraction:

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<tr>
<td>None</td>
<td>If the patient was transferred from an emergency department of another hospital, do not use “7”. “7” is only for patients admitted upon recommendation of this facility’s emergency department physician.</td>
</tr>
</tbody>
</table>
Data Element Name: Race

Collected For: All records

Definition: Documentation of the patient’s race

Suggested Data Collection Question: What is the patient’s race?

Format: Alphanumeric

Allowable Values:

1 White: Patient’s race is White or the patient has origins in Europe, the Middle East or North Africa

2 Black: Patient’s race is Black or African American

3 American Indian or Alaska Native: Patient’s race is American Indian/Alaska Native.

4 Asian: Patient’s race is Asian

5 Native Hawaiian or Pacific Islander: Patient race is Native Hawaiian/Pacific Islander

7 UTD: Unable to determine the patient’s race or not stated (e.g., not documented, conflicting documentation or patient unwilling to provide).

Notes for Abstraction:

- The data element Hispanic Ethnicity is required in addition to this data element
- If documentation indicates the patient has more than one race (e.g., Black-White, Indian-White), select the first listed race.
- Although the terms “Hispanic” and “Latino” are actually descriptions of the patient’s ethnicity, it is not uncommon to find them referenced as race. If the patient’s race is documented only as Hispanic/Latino, select “White”. If the race is documented as mixed Hispanic/Latino with another race, use whatever race is given (e.g., Black-Hispanic – select “Black”) Other terms for Hispanic/Latino include Chicano, Cuba, H (for Hispanic), Latin American, Latina, Mexican, Mexican-American, Puerto Rican, South or Central American, and Spanish

Suggested Data Sources:

- Emergency Department record
- Face sheet
- History and physical
- Nursing admission assessment
- Progress notes
**Guidelines for Abstraction:**

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<tr>
<td><strong>Black or African American</strong> A person having origins in any of the black racial groups of Africa. Terms such as “Haitian” or “Negro” can be used in addition to “Black or African American”</td>
<td>None</td>
</tr>
<tr>
<td><strong>American Indian or Alaska Native</strong> A person having origins in any of the original peoples of North and South American (including Central America) and who maintains tribal affiliation or community attachment (e.g., any recognized tribal entity in North and South America [including Central America], Native American).</td>
<td>None</td>
</tr>
<tr>
<td><strong>Asian</strong> A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent, including for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand and Vietnam.</td>
<td>None</td>
</tr>
<tr>
<td><strong>White</strong> A person having origins in any of the original peoples of Europe, the Middle East, or North Africa (e.g., Caucasian, Iranian, White).</td>
<td>None</td>
</tr>
<tr>
<td><strong>Native Hawaiian or Pacific Islander</strong> A person having origins in any of the other original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.</td>
<td>None</td>
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</tbody>
</table>
Data Element Name: 

Report Period

Collected For: 

All records

Definition: 

A quarter within the year

Suggested Data Collection Question: 

For what report period are these data reported?

Format: 

q-yyyy

Allowable Values: 

1 (January – March)  
2 (March – June)  
3 (July – September)  
4 (October – December)  

YYYY = Year (2000 – 9999)

Notes for Abstraction: 

Inpatients are included in the quarter in which they were discharged.

Suggested Data Sources: 

- Face sheet  
- Discharge data

Guidelines for Abstraction:

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</table>
Data Element Name: Sex

Collected For: All records

Definition: The patient’s sex

Suggested Data Collection Question: What is the patient's sex?

Format: Alphanumeric

Allowable Values: M = Male  
F = Female  
U = Unknown

Notes for Abstraction: None

Suggested Data Sources:  
- Consultation notes  
- Emergency department record  
- Face sheet  
- History and physical  
- Nursing admission notes  
- Progress notes  
- UB-04, (previously UB-92)

Guidelines for Abstraction:

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<td>None</td>
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</table>
Data Element Name:  *Statin Medication Prescribed at Discharge*

Collected For:  DSC Stroke-06: Discharged on Statin Medication

Definition:  Documentation that statin medication was prescribed at discharge. Statins are a class of pharmaceutical agents that modify LDL cholesterol by blocking the action of an enzyme in the liver which is needed to synthesize cholesterol thereby decreasing the level of cholesterol circulating in the blood.

Suggested Data Collection Question:  Is there documentation that statin medication was prescribed at discharge?

Format:  Alphanumeric

Allowable Values:  
Y (Yes, statin medication was prescribed at discharge)  
N (No, statin medication was not prescribed at discharge OR unable to determine from medical record documentation)  
NC (No, statin medication was not prescribed at discharge. A documented reason exists for not administering this therapy)

Notes for Abstraction:  
- If the patient refused prescription for statin medication at discharge, select “NC”.  
- In determining whether statin medication was prescribed at discharge, it is not uncommon to see conflicting documentation among different medical record sources. For example, the discharge summary may list a drug that is not included in any of the other discharge medication sources (e.g., discharge orders). All discharge medication documentation available in the chart should be reviewed and taken into account by the abstractor.  
- In cases where there is statin medication noted in one source that is not mentioned in other sources, it should be interpreted as a discharge medication (select “Yes”) unless documentation elsewhere in the medical records suggest that it was NOT prescribed at discharge – **Consider it a discharge medication in the absence of contradictory documentation**.  
- If documentation is contradictory (e.g., MD noted discontinuation of statin medication in the discharge medication orders, but it is listed in the discharge summary’s discharge medication list), or after careful examination of circumstances, context, timing, etc., documentation raises enough questions, the case should be deemed “unable to determine” (select “No”).  
- When there is a documented plan to delay initiation/restarting of statin medication for a time period after discharge, select “No”.  
- Reasons for not prescribing statin medication at discharge must be explicitly documented by a physician, advanced practice nurse, or physician assistant (physician/APN/PA). If documentation by a physician, advanced practice nurse, or physician assistant is
present in the chart that indicates that the patient has no evidence of atherosclerosis, select “NC”.

**Suggested Data Sources:**
- Discharge instruction sheet
- Discharge summary
- Nursing discharge notes
- Physician orders sheet
- Transfer sheet

**Guidelines for Abstraction:**

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<tr>
<td>Refer to Appendices, Table 4 for a comprehensive list of statin medications.</td>
<td>None</td>
</tr>
</tbody>
</table>
Data Element Name: Time IV Thrombolytic Therapy Administered at This Hospital

Collected For: DSC/Stroke-04: IV Thrombolytic Therapy Administered

Definition: The time that IV thrombolytic therapy was initiated at the reporting hospital.

Suggested Data Collection Question: At what time was IV thrombolytic therapy administered at this hospital?

Format: HH:MM
Alphanumeric

Allowable Values: HH = Hour (00-23)
MM = Minutes (00-59)
ND = Time not documented or unknown

Converting clock time to military time:
With the exception of midnight and noon
- If the time is in the a.m., conversion is not required
- If the time is in the p.m., add 12 to the clock time hour
For example:
Midnight – 00:00
Noon – 12:00
11:59 p.m. – 23:59

Notes for Abstraction: This data element applies only to patients for whom IV thrombolytic therapy was initiated at this hospital. Do not abstract this data element if IV thrombolytic therapy was initiated at another hospital and patient was subsequently transferred to this hospital.

Use the time at which the initiation of the medication was first documented

If a discrepancy exists in time documentation from different sources, choose the earliest time.

Suggested Data Sources: - Emergency Department record
- Medication administration record
- Progress notes

Guidelines for Abstraction:

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Data Element Name: Time Last Known Well

Collected For: DSC/ Stroke-04: IV Thrombolytic Therapy Administered

Definition: The time at which the patient was last known to be without the signs and symptoms of the current stroke or at his or her prior baseline.

Suggested Data Collection Question: At what time was the patient last known to be well or at his or her prior baseline?

Format: HH:MM
Alphanumeric

Allowable Values: HH = Hour (00-23)
MM = Minutes (00-59)
ND = Time not documented or unknown at the time treatment decision was made

Converting clock time to military time:
With the exception of midnight and noon
- If the time is in the a.m., conversion is not required
- If the time is in the p.m., add 12 to the clock time hour
For example:
Midnight = 00:00
Noon = 12:00
11:59 p.m. = 23:59

Notes for Abstraction: If a stroke “onset time” is listed in the medical record, without reference to the circumstances preceding its detection, then it should be assumed to be the time last known well. Enter this time in the specified format. If there is a specific reference to the patient having been discovered with symptoms already present, then this “onset time” should be treated as a “time of symptom discovery” rather than a time of last known well and “ND” should be selected for the time last known well.

When a time of discovery is documented, but the symptom onset is not witnessed and no time last known well is documented, then “ND” should be selected for time last known well.

When the onset of symptoms is clearly witnessed, then the time last known well is identical to the time of symptom discovery.

If the time last known well is documented as being a specific number of hours prior to arrival (e.g., 2 hours ago) rather than a calendar time, subtract that number from the time of hospital or ED arrival and enter that time as the time last known well.
If the time last known well is noted to be a range of time prior to hospital or ED arrival (e.g., “2 – 3 hours ago”), assume the maximum time from the range (e.g., 3 hours), and subtract that number of hours from the time of arrival to compute the time last known well.

If there are multiple times of last known well documented, either because subsequent more accurate information became available or because of different levels of expertise in sorting out the actual time last known well, use the time recorded according to the following hierarchy:
1. stroke team/neurology
2. admitting physician
3. emergency department physician
4. ED nursing notes
5. EMS

Suggested Data Sources:  
- History and physical  
- Emergency department records  
- Progress notes  
- Transfer documents.

Guidelines for Abstraction:

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DATA COLLECTION AND DATA REPORTING

Data Collection
Data collection is the continuous process of gathering data according to the measure specifications established for each of the ten harmonized stroke performance measures. Data may be collected for additional non-standardized measures, if a program chooses to monitor other indicators not included in the standardized measure set. All DSC certified stroke programs should be collecting data for all ten standardized measures. Data collection for non-standardized measures may be used to enhance the program’s performance improvement plan, but cannot be used to replace or substitute for data collection for the standardized measures.

Ideally, programs should be collecting data for all ten standardized measures every month; however, other schedules can be utilized (i.e. quarterly) with the provision that monthly data points are gathered and reported (e.g. graphs and/or tables with data plotted for every month of the calendar year.) Programs that do not prospectively collect data due to resource or other constraints should take steps to ensure that the appropriate number of cases is reviewed and findings displayed for each month.

Example:
In October, a program reviews 60 patient records for third quarter stroke performance measure data. The sample selected should include 20 records from stroke patients discharged in July, 20 from patients discharged in August, and 20 from patients discharged in September. All 60 records should not be pulled from stroke patients discharged in October, leaving gaps in monitoring for other months.

Data Reporting and Submission
Data reporting is a periodic event that provides the organization with an opportunity to share the findings and analyses of its data collection efforts with internal staff members, other departments, or similar programs in an integrated health system delivery network. Graphic data displays should be used to demonstrate data analysis and included as part of the data report. Data reporting should be done on a calendar year, rather than fiscal year basis.

Primary Stroke Centers are required to electronically submit stroke measure data to The Joint Commission each quarter via the Certification Measure Information Process (CMIP) available through The Joint Commission Connect™ secure-extranet. Data submitted to The Joint Commission should include the numerator and denominator value for each measure. The application will calculate the measure rate based on the values entered. The Performance Measure Data Report (see Appendices) is also available through CMIP and should be completed by the time of intra-cycle review and recertification.
DATA COLLECTION AND DATA REPORTING TOOLS
STROKE

Introduction
These tools have been developed as one option for collecting and reporting DSC stroke measure data. Your organization may choose to design manual data collection and reporting tools of your own or develop an electronic format for data collection and data reporting. These data tools have been created with the following objectives:

- Minimize unnecessary entries;
- Expedite and streamline the data collection process; and
- Facilitate data aggregation for measure rate calculations and report submission.

The data elements included in these tools could be added to an existing data collection tool or program within your organization or your organization may wish to add other data elements to these forms with a goal of avoiding duplicative or multiple data abstraction activities. Combining data collection efforts may support additional performance improvement initiatives as well.

Guide to Use
1) Always complete the report period information. This is critical since a single patient/participant might be included in multiple report periods.
2) Always complete questions 1-12. These data elements capture fundamental population inclusion criteria and will avoid the collection of data for patients who are not eligible for any measure populations.
3) Always complete one data collection tool per patient case.
4) Aggregate Category D and Category E responses from each Data Collection Tool and complete the Data Reporting Tool to calculate rates.
5) It is very important that the data definitions and abstraction guidelines included in the Data Element Dictionary (Section 5) of the Stroke Performance Measurement Implementation Guide be used when abstracting data for these measures.

Refer to Section 5 of the Stroke Performance Measurement Implementation Guide for detailed data element definitions and abstraction guidelines.
DATA COLLECTION TOOL
STROKE

Report Period (Month)  Note: Time period for inpatients is based on the patient’s discharge date

☐ January  ☐ February  ☐ March  ☐ April  ☐ May  ☐ June

☐ July  ☐ August  ☐ September  ☐ October  ☐ November  ☐ December

Year ___ ___ ___ ___

Core Data Elements

1) Case ID #___ ___ ___ ___ ___  2) Treated at a DSC Certified Primary Stroke Center Program
   a) ☐ Yes  b) ☐ No (Stop)

3) Gender  ☐ Male  ☐ Female  4) Birth Date ___ ___ / ___ ___ / ___ ___ ___ ___

5) Age 18 years or older  ☐ a) Yes  ☐ b) No (Stop)

6) Arrival Date ___ ___ / ___ ___ / ___ ___ ___ ___  7) Arrival Time (military) ___ ___ : ___ ___

Refer to Section 5 of the Stroke Performance Measurement Implementation Guide for detailed data element definitions and abstraction guidelines.
Refer to Section 5 of the *Stroke Performance Measurement Implementation Guide* for detailed data element definitions and abstraction guidelines.

8) Admission Date ___ ___ / ___ ___ / ___ ___ ___ ___  9) Discharge Date ___ ___ / ___ ___ / ___ ___ ___ ___

10) Admitted for Elective Carotid Endarterectomy
   □ a) Yes (Stop)   □ b) No

11) Discharge Status
   □ 01 Discharged to home care or self care (routine discharge)
   □ 02 Discharged/transferred to another short term general hospital for inpatient care
   □ 03 Discharged/transferred to a skilled nursing facility (SNF) with Medicare certification
   □ 04 Discharged/transferred to an intermediate care facility
   □ 05 Discharged/transferred to another type of institution for inpatient care
   □ 06 Discharged/transferred to home under care of organized home health service organization
   □ 07 Left against medical advice or discontinued care
   □ 20 Expired
   □ 41 Expired in medical facility, such as hospital, SNF, ICF or freestanding hospice (Hospice). *Usage Note:* For use only on Medicare and CHAMPUS (TRICARE) claims for hospice care.
   □ 43 Discharged/transferred to a federal health care facility (e.g., Department of Defense hospital, Veterans Administration hospital or nursing facility)
   □ 50 Hospice - home
   □ 51 Hospice - medical facility
   □ 61 Discharged/transferred within this institution to hospital-based Medicare approved swing bed. *Usage Note:* Medicare-used for reporting patients discharged/transferred to a SNF level of care within a hospital’s approved swing bed arrangement.
   □ 62 Discharged/transferred to an inpatient rehabilitation facility (IRF) including rehabilitation distinct part units of a hospital
   □ 63 Discharged/transferred to a Medicare certified long term care hospital (LTCH)
   □ 64 Discharged/transferred to a nursing facility certified under Medicaid but not certified under Medicare
   □ 65 Discharged/transferred to a psychiatric hospital or psychiatric distinct part unit of a hospital
   □ 66 Discharged/transferred to a Critical Access Hospital (CAH)
   □ --- Unknown ---
12) ICD-9-CM Diagnosis Codes

Principal ___ ___ ___ · ___ ___

Other ___ ___ · ___ ___   ___ ___ · ___ ___   ___ ___ · ___ ___

ICD-9-CM Principal Diagnosis Codes for Ischemic Stroke: All 10 Measures
ICD-9-CM Principal Diagnosis Codes 430 & 431, Hemorrhagic Stroke: STK-1; STK-7; SKT-8; STK-9; STK-10
(See Appendices Table 1 & Table 2)

---

**DSC STK-1: DVT Prophylaxis**

13) Patient discharged before the end of hospital day two  □ a) Yes (Stop)  □ b) No

14) Patient ambulatory at end of hospital day two  □ a) Yes (Stop)  □ b) No

15) Comfort Measures Only by end of hospital day two  □ a) Yes (Stop)  □ b) No

16) DVT prophylaxis initiated by the end of hospital day two
   □ a) Yes (This patient is in Category E)
   □ b) No (This patient is in Category D)
   □ c) NC – a documented reason exists (Stop)

Refer to Section 5 of the *Stroke Performance Measurement Implementation Guide* for detailed data element definitions and abstraction guidelines.
DSC STK-2: Discharged on Antithrombotic Therapy (ICD-9-CM Principal Diagnosis Codes for Ischemic Stroke Only)

17) Discharge Status
   □ a) = 02, 07, 20, 41, 50, 51, 66, Unknown (Stop)
   □ b) = 01, 03, 04, 05, 06, 43, 61, 62, 63, 64, 65

18) Comfort Measures Only  □ a) Yes (Stop)  □ b) No

19) Antithrombotic therapy prescribed at discharge
   □ a) Yes (This patient is in Category E)
   □ b) No  (This patient is in Category D)
   □ c) NC– a documented reason exists (Stop)

DSC STK-3: Patients with Atrial Fibrillation Receiving Anticoagulation Therapy
(ICD-9-CM Principal Diagnosis Codes for Ischemic Stroke Only)

20) Discharge Status
   □ a) = 02, 07, 20, 41, 50, 51, 66, Unknown (Stop)
   □ b) = 01, 03, 04, 05, 06, 43, 61, 62, 63, 64, 65

21) Comfort Measures Only  □ a) Yes (Stop)  □ b) No

22) Atrial Fibrillation (atrial flutter, paroxysmal atrial fibrillation (PAF))
   □ a) Yes
   □ b) No (Stop)

23) Patient discharged on anticoagulation therapy
   □ a) Yes (This patient is in Category E)
   □ b) No  (This patient is in Category D)
   □ c) NC– a documented reason exists (Stop)

Refer to Section 5 of the Stroke Performance Measurement Implementation Guide for detailed data element definitions and abstraction guidelines.
DSC STK-4: Thrombolytic Therapy Administered  (ICD-9-CM Principal Diagnosis Codes for Ischemic Stroke Only)

24) Date Last Known Well (MM/DD/YYYY)  □ a) ___ ___ / ___ ___ / ___ ___ ___ ___

25) Time Last Known Well (Hour 00-23 / Min. 00-59)  □ a) ___ ___: ___ ___

   □ b) ND (time not documented or unknown at the time the treatment decision was made)

26) Arrival Time (military) ___ ___ : ___ ___  (Question 7)

27) Compute:  Arrival Time – (minus) Time Last Known Well:  ___ ___: ___ ___ – (minus) ___ ___: ___ ___ = ___: ___ ___

28) Arrival Time – (minus) Time Last Known Well is less than or equal to 2 hrs (120 min)  □ a) Yes  □ b) No (Stop)

29) IV thrombolytic administered to the patient at this hospital
   □ a) Yes
   □ b) No (This patient is in Category D)
   □ c) NC– a documented reason exists (Stop)

30) Date IV thrombolytic administered at this hospital   ___ ___ / ___ ___ / ___ ___ ___ ___

31) Time IV thrombolytic administered at this hospital (military)   ___ ___ : ___ ___

   □ b) ND (time not documented or unknown at the time the treatment decision was made)

32) Compute: Time IV Thrombolytic Administered at this Hospital – (minus) Time Last Known Well:

   ___ ___: ___ ___ – (minus) ___ ___: ___ ___ = ___: ___ ___

33) IV thrombolytic administered in less than or equal to 3 hrs (180 min) of time of last known well
   □ a) Yes (This patient is in Category E)  □ b) No (This patient is in Category D)

Refer to Section 5 of the Stroke Performance Measurement Implementation Guide for detailed data element definitions and abstraction guidelines.
Refer to Section 5 of the *Stroke Performance Measurement Implementation Guide* for detailed data element definitions and abstraction guidelines.

**DSC STK-5: Antithrombotic Therapy By End of Hospital Day Two**  
(ICD-9-CM Principal Diagnosis Codes for Ischemic Stroke Only)

34) Patient discharged by end of hospital day two  
□ a) Yes (Stop)  □ b) No

35) Comfort Measures Only by end of hospital day two  
□ a) Yes (Stop)  □ b) No

36) Antithrombotic therapy administered by the end of hospital day two  
□ a) Yes (This patient is in Category E)  
□ b) No (This patient is in Category D)  
□ c) NC – a documented reason exists (Stop)

**DSC STK-6: Discharged on Cholesterol Reducing Medication**  
(ICD-9-CM Principal Diagnosis Codes for Ischemic Stroke Only)

37) Discharge Status  
□ a) = 02, 07, 20, 41, 50, 51, 66, Unknown (Stop)  
□ b) = 01, 03, 04, 05, 06, 43, 61, 62, 63, 64, 65

38) Comfort Measures Only  
□ a) Yes (Stop)  □ b) No

39) Cholesterol reducing therapy prior to hospitalization  
□ a) Yes (Skip 40 & 41)  □ b) No

40) LDL Measured  
□ a) Yes  □ b) No (Skip 41)

41) LDL > 100 mg/dL  
□ a) Yes  □ b) No (Stop)
42) Cholesterol reducing medication prescribed at discharge
   - a) Yes (This patient is in Category E)
   - b) No (This patient is in Category D)
   - c) NC– a documented reason exists (Stop)

**DSC STK-7: Dysphagia Screening**

43) No oral intake (NPO) of food, fluid, or medication for entire hospital stay
   - a) Yes (Stop)
   - b) No

44) Dysphagia screen performed prior to oral intake
   - a) Yes (This patient is in Category E)
   - b) No (This patient is in Category D)
   - c) NC– a documented reason exists (Stop)

**DSC STK-8: Stroke Education**

45) Discharge Status
   - a) = 02, 07, 20, 41, 50, 51, 66, Unknown (Stop)
   - b) = 01, 03, 04, 05, 06, 43, 61, 62, 63, 64, 65

46) Comfort Measures Only
   - a) Yes (Stop)
   - b) No

47) Education addresses activation of EMS (Patient and/or caregiver received education and/or resource materials)
   - a) Yes
   - b) No
   - c) NC– a documented reason exists (Stop)

Refer to Section 5 of the *Stroke Performance Measurement Implementation Guide* for detailed data element definitions and abstraction guidelines.
48) Education addresses need for follow-up after discharge from hospital
(Patient and/or caregiver received education and/or resource materials)
☐ a) Yes
☐ b) No
☐ c) NC– a documented reason exists (Stop)

49) Education addresses medications prescribed (Patient and/or caregiver received education and/or resource materials)
☐ a) Yes
☐ b) No
☐ c) NC– a documented reason exists (Stop)

50) Education addresses personal risk factors for stroke (Patient and/or caregiver received education and/or resource materials)
☐ a) Yes
☐ b) No
☐ c) NC– a documented reason exists (Stop)

51) Education addresses warning signs and symptoms of stroke
(Patient and/or caregiver received education and/or resource materials)
☐ a) Yes
☐ b) No
☐ c) NC– a documented reason exists (Stop)

52) Yes checked for all 5 education questions 47 – 51
☐ a) Yes (This patient is in Category E)
☐ b) No (This patient is in Category D)

Refer to Section 5 of the Stroke Performance Measurement Implementation Guide for detailed data element definitions and abstraction guidelines.
DSC STK-9: Smoking Cessation / Advice / Counseling

53) Discharge Status
   □ a) = 02, 07, 20, 41, 50, 51, 66, Unknown (Stop)
   □ b) = 01, 03, 04, 05, 06, 43, 61, 62, 63, 64, 65

54) Comfort Measures Only □ a) Yes (Stop) □ b) No

55) Adult Smoking History □ a) Yes □ b) No (Stop)

56) Smoking cessation / advice / counseling was given to the patient or caregiver during the hospital stay
   □ a) Yes
   □ b) No
   □ c) NC– a documented reason exists (Stop)

DSC STK-10: Assessed for Rehabilitation

57) Discharge Status
   □ a) = 02, 07, 20, 41, 50, 51, 66, Unknown (Stop)
   □ b) = 01, 03, 04, 05, 06, 43, 61, 62, 63, 64, 65

58) Comfort Measures Only □ a) Yes (Stop) □ b) No

59) Patient assessed for or received rehabilitation services
   □ a) Yes (This patient is in Category E)
   □ b) No (This patient is in Category D)

Refer to Section 5 of the *Stroke Performance Measurement Implementation Guide* for detailed data element definitions and abstraction guidelines.
DATA REPORTING TOOL
STROKE

INSTRUCTIONS:
1) Collect all Data Collection Tools (one per patient case) completed during the month.
2) Aggregate the total number Category E and Category D responses for each stroke measure as recorded on the Data Collection Tools and complete the corresponding columns below (Columns 2 & 3).
3) Add the total number of Category E (Column 2) responses and the total number of Category D (Column 3) responses and record in Column 4.
4) Divide the total number of Category E (Column 2) responses by the Sum of E + D (Column 4) and record the rate (%=percent) produced in Column 5.

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NOTE: Total # Category E Responses (Column 2) = Numerator
Sum [Total # E + Total # D] (Column 4) = Denominator
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**NOTE:** Total # Category E Responses (Column 2) = Numerator
Sum [Total # E + Total # D] (Column 4) = Denominator
### DSC STK-4
**Thrombolytic Therapy Administered**

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### DSC STK-5
**Antithrombotic Therapy By End of Hospital Day Two**

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| **DSC STK-6**  
Discharged of Cholesterol Reducing Medication | Total # Category E Responses | Total # Category D Responses | Total # E + Total # D (Sum = E + D) | Total # E / Sum (E + D) |
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| **DSC STK-7**  
Dysphagia Screening | Total # Category E Responses | Total # Category D Responses | Total # E + Total # D (Sum = E + D) | Total # E / Sum (E + D) |
| Year: 20 | | | | |
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**NOTE:**  
Total # Category E Responses (Column 2) = Numerator  
Sum [Total # E + Total # D] (Column 4) = Denominator
### DSC STK-8
**Stroke Education**

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### DSC STK-9
**Smoking Cessation/Advice/Counseling**

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**NOTE:**
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SAMPLING

Introduction
Sampling is a process of selecting a representative part of a population in order to estimate the organization’s performance, without collecting data for its entire population. Using a statistically valid sample, an organization can measure its performance in an effective and efficient manner. Sampling is a particularly useful technique for performance measures that require primary data collection from a source such as the medical record. Sampling should not be used unless the organization has a large number of cases in the measure population because a fairly large number of sample cases are needed to achieve a representative sample of the population of interest. Organizations with large patient volumes may perform data collection on a sample of the total population, but sampling is not required.

To obtain statically valid sample data, the sample size should be carefully determined and the sample cases should be randomly selected in such a way that the individual cases in the population have an equal chance of being selected. Only when the sample data truly represent the whole population can the sample-based performance measure data be meaningful and useful.

Disease Specific Care (DSC) certified programs must meet the following sampling requirements:

Sampling Availability
Sampling is done by diagnosis and should be done using available databases that contain monthly patient discharge information, ICD-9-CM diagnosis codes, and other necessary administrative data (e.g., only patients 18 and older are included in the DSC stroke measures).

The DSC-Stroke measure set sampling populations are defined below:

- Patients with ICD-9-CM Codes for Ischemic Stroke as defined in the Appendices, Table 1
- Patients with ICD-9-CM Codes for Hemorrhagic Stroke as defined in the Appendices, Table 2

Sample Size Requirements
Programs selecting sample cases for the stroke measures should ensure that its measure population(s) and sample size(s) meet the following conditions:
- The patient population includes stroke patients with an ICD-9-CM Principal Diagnosis Code as listed in Table 1 or Table 2 (See Appendices).
The sampling methodology is as follows:

### Monthly Sample Size Based on Population Size

<table>
<thead>
<tr>
<th>Patient Volume</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 9</td>
<td>100%</td>
</tr>
<tr>
<td>10 - 49</td>
<td>10</td>
</tr>
<tr>
<td>50 - 99</td>
<td>20%</td>
</tr>
<tr>
<td>&gt; 100</td>
<td>20</td>
</tr>
</tbody>
</table>

### Sample Size Examples
- A program has 8 discharges in the first reporting month. All 8 cases (100%) should be reviewed.
- A program has 47 discharges in the second reporting month. The sample size for this month would be 10 cases.
- A program has 95 discharges in the third reporting month. The sample size would be 20% of 95, or 19 cases.
- A program has 360 discharges in the fourth reporting month. The sample size would be 20 cases (maximum monthly sample size).

### Systematic Random Sampling Approach

Systematic random sampling requires selecting every \( k \)th record from a population of size \( N \) in such a way that a sample size of \( n \) is obtained, where \( k \leq N/n \). The first sample record (i.e., the starting point) must be randomly selected before taking every \( k \)th record. This is a two-step process:

a) Select the starting point; and  
b) Then select every \( k \)th record thereafter until the selection of the sample size is completed.

### Example:

For a program with a population size of 360 discharges per month, the sample size would be 20. To select a random sample of 20 cases:

1) Determine the population size (total discharges) for the month;  
2) Determine the sample size using the above table;  
3) Divide the population size by the sample size and take the quotient (i.e., the integer as the sampling interval \( k \)). The sampling interval \( k = 360/20 = 18 \). Thus, every 18th patient record will be selected from the measure population until 20 cases are selected.)  
4) To ensure that each patient has an equal chance of being selected, the “starting point” must be randomly determined before selecting every 18th record. Therefore a simple approach to determine where to start would be to write the numbers 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18 on separate pieces of paper and place the numbers in a container and pull one piece of paper. For example if you draw the number 3, start with the 3rd case on your list and select every 18th case after that until you reach 20 cases.
DATA UTILIZATION

Introduction

Improving the delivery of health care and the patient outcomes related to that care has always been a goal for health care providers. The last several decades have seen exciting advances in the methods employed toward this end. Through the study of work conducted in the industrial community and improvement methods with demonstrated effectiveness, tools and techniques of quality improvement have been applied to health care settings. However, the concept of collecting health care data to study care delivery and outcomes is not really new. Historical examples include the work of Florence Nightingale and Dr. Ernest Codman. Miss Nightingale is generally remembered as the founder of modern nursing, however her groundbreaking-work involving the collection of standardized data, the use of statistical analysis and graphical display is equally important. It was during the Crimean war that she invented the polar-area diagram to display various causes of death among soldiers as proportions of a wedge in a circle. Each wedge represented a month, thereby providing comparisons over time. Ernest Codman, a surgeon, was another pioneer in the use of data to track outcomes in healthcare. Early in the twentieth century he developed a system for collecting a set of standardized data on his surgical patients that included diagnosis, treatment, hospital complications and the result one year later. Called the End Result Idea, many of Codman’s principles are now captured in current outcomes measurement. Both of these pioneers used data and scientific methods to evaluate performance and improve the quality of care. While advances in the science and technology of quality improvement have introduced additional tools and sophisticated types of data analysis, it is important to remember that measurement need not be difficult and complex to be effective, as illustrated by these historical examples.

For many readers of this guide, the methods and terminology associated with the use of performance measures, data collection, analysis and interpretation are very familiar and no introduction is needed. For others, this material may be less familiar. This section provides a brief review of some basic data analysis options as well as references for publications that address this topic in more detail.

The greater the understanding of the measurement process, the more effectively opportunities for improvement can be identified and changes implemented. Deciding what to measure, how to measure and how to analyze your data are important keys to success. The performance measures in this booklet are quantitative tools (for example, rate ratio, index, percentage) developed to provide an indication of your organization’s performance on a selected process or outcome related to a specific disease or topic. The individual measure data provide the critical pieces that will be used in various analyses to identify patterns, trends, and opportunities for improvement, and to document performance and results. By using the standardized data definitions and calculation formulas (flowcharts) provided for each measure in this disease specific set, performance within your organization can be tracked over
time. In addition to these measures your organization may find it important to examine other processes and outcomes. The performance measurement tools and analysis approaches reviewed in this section may assist your organization to understand variations in processes, to identify improvement opportunities, and to document and sustain improved performance.

Analysis

Data are the critical components used for analysis. As such, a few words about the data themselves are warranted. Data include facts, observations, and measurements. As collected and recorded, they are often referred to as “raw data”. Through the application of appropriate statistical techniques and analysis tools, data can be interpreted and translated into information. Because analyses and ultimately conclusions are driven by data, the quality of the data is critical. The old adage “garbage in – garbage out” definitely applies here. Time spent up front to ensure that data are accurate, complete and consistent will support the integrity of the results. Data definitions and suggested sources have been provided for each measure in this set. It will be important to apply the definitions exactly as written and identify a consistent source for each data element within your organization’s documentation system. In some cases it may be necessary or more efficient to add a data element or a place to document observations/measurements to existing forms. These steps will help to streamline the collection process, minimize missing entries and ensure the credibility of your data.

There are a variety of tools used to facilitate the performance improvement process and analysis of performance measure data. Some are designed to support activities conducted by a team as part of a systematic approach to quality improvement. Many approaches are available but they share the use of methodology designed to systematically guide people through the stages of an improvement initiative. One example of a well known method is the Plan-Do-Study-Act (PDSA) cycle developed by Walter Shewhart (1891-1967). Examples of performance measurement tools designed for group processes include brainstorming and multi-voting. Use of an organized approach to performance measurement is one of the expectations for Primary Stroke Center Certification. For an in-depth review of performance measurement methods and analysis tools/techniques several references are included at the end of this section. The overview of some of the common tools used for data analysis and display provided here may assist participants beginning the process of translating data into information. The tools described below are divided into two categories; those for understanding root causes for problems and those for analyzing/displaying data. For additional information on the methods and tools presented here, as well as others, see Tools for Performance Measurement in Health Care: A Quick Reference Guide and other suggested references for additional reading at the end of this section.
Root Cause Analysis (Identifying relationships and possible causes):
These tools are designed to assist your organization in examining the relationship of various factors to the targeted performance as well as identifying possible causes for unsatisfactory performance/outcomes.

Root Cause Analysis Tools

a) Cause and Effect (Fishbone) Diagram: A schematic drawn to clearly illustrate the various causes affecting a process by sorting out the causes contributing to the effect. The notation format used takes on the appearance of a fish skeleton leading to the name “Fishbone Diagram”.

- Key applications
  - Early in the performance improvement process
  - Assists in focusing on a number of possible causes

- Benefits
  - To identify possible causes contributing to a possible problem
  - Depict the relationship between the problem and its causes

Performance Improvement in Asthma Care
Sample Cause and Effect Diagram

<table>
<thead>
<tr>
<th>Causes Contributing to Spirometry Scheduling Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CAUSES</strong></td>
</tr>
<tr>
<td>Only one scheduler</td>
</tr>
<tr>
<td>Only one facility for referrals</td>
</tr>
<tr>
<td>Priority for inpatients</td>
</tr>
<tr>
<td>Seasonal demand fluctuations</td>
</tr>
<tr>
<td>Frequent equipment breakdowns</td>
</tr>
<tr>
<td>Limited public transportation</td>
</tr>
<tr>
<td>Limited equipment availability</td>
</tr>
<tr>
<td>Two available technicians</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>EFFECT</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lengthy Wait Times for Spirometry Assessment Appointments</td>
</tr>
</tbody>
</table>

b) Flowchart: A diagram illustrating, through the use of common symbols (see Appendices) the step by step path a process follows. Generally a tool used in planning stages.
Key applications
- When designing new processes, identifying problems, planning solutions

Benefits
- Graphically presents the path a process follows, step by step
- Helps identify inefficiencies, misunderstanding, and redundancies, while providing insight into how a given process should be performed

Performance Improvement in Heart Failure Care

Heart Failure Screening Flowchart
LVF Assessment Process
(Average Data)

- Screening Exam
  - Refer to cardiologist
  - Cardiology exam appointment
  - Schedule for ECHO exam
  - ECHO appointment

- Results to primary care physician
  - Return appointment
  - Patient Gets Results

October 2002
Average Total=22.1 Days

Pareto Chart: A chart displaying the causes of a problem ranked by order of occurrence. By revealing which causes have the greatest influence, priorities can be set for interventions.

Key applications
- Finding causes of a problem, and setting priorities for intervention-focus efforts
- Bars in rank order of occurrence
- Bars represent a different variable or problem

Benefits
- Reveals which causes of a problem are most important
- Separate “vital few” (80/20 rule)

Drawbacks
- Not applicable to problems with a single cause
Pareto Chart of Reasons for Not Administering IV t-PA

Key: 1= IV t-PA given at outside hospital prior to transfer  
2= Elevated PTT or PT/ INR  
3= History of intracranial hemorrhage  
4= IV t-PA offered but patient/family refused  
5= No IV access

d) **Scatter Diagram**: This tool is a graph on which variables are represented by individual points. The patterns formed by the individually plotted points reveal the relationship (or lack of) between variables. It does not establish causation but rather the correlation between two factors.

- **Key applications**
  - Determines whether a correlation exists between two variables: Is variable A related to or affecting variable B?
  - Chart facilitates searching for possible cause and effect relationship (e.g. education accompanied by written instructions with improved self-management)

- **Benefits**
  - Quick, easy and certain

- **Drawbacks**
  - Requires a large set of data  
  - Indicates a relationship, but not causation
Performance Improvement in Asthma Care

Sample Scatter Diagram – Patient Contacts and number of ER Visits

Analysis – Display

These tools are useful for assessing your data. As part of data assessment, analysis tools support sorting, organizing, and aggregating data as well as displaying patterns/trends in performance. These tools provide the keys to unlocking what the data mean and they support accurate interpretation. Analysis can vary in complexity making the selection of techniques and tools an important consideration. It is also important to consider organizational expertise and resources (human and technological), and thoughtfully match the tools with the type and volume of data. The quality improvement professional at your organization is a valuable resource and, if available, should be consulted early and often. Fortunately, there are also many publications now available that provide “how to” guidance that demystifies data analysis and interpretation. Please see the suggested references at the end of this section for the names of a few.

When examining the data collected for the purpose of studying performance it is important to recognize that some variation will exist. For example, if the sales figures at a department store were examined monthly from October to January it would not be surprising to see a steady rise for October to December with a noticeable drop in January. This would be expected due to holiday shopping and would not necessarily mean that there was a problem requiring changes in operations. On the other hand, if sales fell between October and December, there may be some unusual cause; perhaps road construction diverted shoppers to another mall. The patterns of variation in healthcare performance are also subject to normal and unusual variation and therefore it is important to use techniques to understand the variation in a process before taking any action. It should be remembered that these tools will help discern processes that are in statistical control (normal variation) versus out of
**statistical control** (special causes of variation). It does not mean that the performance is satisfactory. Using the store example, sales could be in statistical control but be extremely low leading to bankruptcy. Several of the tools reviewed here are designed to help discern between these types of variation.

**Common cause variation**: Normal variation in any process; not indicative of a process that is out of statistical control.

Examples:
- Number of ambulatory patients seen daily
- Varying levels of patient acuity
- Percentage of incomplete records

**Special cause variation**: A factor that intermittently and unpredictably induces variation over and above that inherent in the system. When viewing a control chart, it often appears as an extreme point, such as the point beyond the control limits or as one of several defined patterns in the data.

Examples:
- Damage to client records because of water damage from a burst pipe
- Increased volume of patients seeking laser surgery for vision correction following an extensive promotional media campaign
- Increase in telephone calls from parents to a public health department following news stories about several cases of bacterial meningitis in local children

**Data Analysis/Display Tools**

a) **Histogram**: A bar chart that displays the variation and the distribution of that variation for a process at a single point in time.
   - **Key applications**
     - Bar chart used for one variable
     - Evaluating a process at a specific point in time
     - Used when there is a wide variety of results
   - **Benefits**
     - Reveals whether the distribution in a process is normal and which areas are probable causes of trouble
     - Used to visualize central location, shape and spread of data
   - **Drawbacks**
     - Not applicable to binary (yes/no) outcomes
     - Needs a large set of data
b) **Line Graph**: This is one of the simplest graphs that can be used to display measurements over specific time periods. Data are plotted and then connected with a line creating upward and downward patterns as performance varies.

- **Key applications**
  - Used to spot trends in a process

- **Benefits**
  - Quick, easy up-to-the-minute

- **Drawbacks**
  - Not able to show if a process is in statistical control
c) **Run Chart**: A run chart is a line chart to which a calculated median value has been drawn as a line for the full length of the X axis. Using this line as a reference, three specific tests can be used to determine if there is special cause variation present.

- **Key applications**
  - Used when analysis is required that is more sophisticated than a line graph, but simpler than a control chart

- **Benefits**
  - Can indicate whether variation is due to a common or special cause
  - Quicker and easier to construct than a control chart

- **Drawbacks**
  - Not as sensitive as a control chart for diagnosing outlier data
Performance Improvement in Diabetic Care

Sample Run Chart -

Percentage of patients with 2 HbA1c done in past year at least 3 months apart

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d) **Control Chart:** This is a line graph which includes a line depicting the mean. It also includes two lines, one on either side of the mean, that are referred to as the upper and lower control limits. These limits are calculated using the mean, standard deviation and the number of observations. The control chart is used to assess if a process is in or out of statistical control, through the application of a series of tests to identify patterns in data points. There are several types of control charts and choosing the correct chart is important. Factors including the type of data, type of performance measure (e.g., rate, ratio) and the size of the sample determine which control chart should be used.

- **Key applications**
  - To discover whether a process is in or out of statistical control

- **Benefits**
  - Monitor changes in performance over time
  - Ascertain causes of variation (special versus common)
  - Assist in developing change strategies
  - Demonstrate if change was an improvement
  - Provides an accurate basis for prediction

- **Drawbacks**
  - Not easy to construct unless using statistical process control (SPC) software
  - Requires knowledge to interpret

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Performance Improvement in Asthma Care

Data analysis can be exciting and rewarding as it begins to provide meaning to a collection of facts, measurements or observations. The tools described here will help to answer some questions but may pose many more. Most importantly, data analysis will help to dispel assumptions and conserve resources by providing a scientific basis for making decisions about performance and selecting areas for improvement.

**Suggested References for Additional Reading**


References


DISEASE-SPECIFIC CARE
STROKE PERFORMANCE MEASURES
GLOSSARY

**Acute ischemic stroke:** A measurable neurological deficit of sudden onset, presumed secondary to focal cerebral ischemia, and not otherwise attributable to intracerebral hemorrhage (ICH) or another disease process.

**Acute hemorrhagic stroke:** A non-traumatic intracerebral hemorrhage, subarachnoid hemorrhage or hemorrhagic infraction. (Georgia definitions)
- Subarachnoid Hemorrhage (SAH): Non-traumatic abrupt onset of headache or altered level of consciousness that is associated with blood in the subarachnoid space on CT or a clinical history and exam consistent with SAH (sudden onset of severe headache or altered level of consciousness) with xanthochromia and many red blood cells in the cerebrospinal fluid. (Reference = ASA coding manual)
- Intracerebral Hemorrhage (ICH): Non-traumatic abrupt onset of headache or altered level of consciousness and/or focal neurological deficit that is associated with a focal collection of blood within the brain parenchyma on CT scan and is not due to trauma or hemorrhagic conversion of a cerebral infarction. (Reference = ASA coding manual)

**Administrative performance measures:** Measures that address the organizational structure for coordinating and integrating services, functions, or activities across operational components, including financial management (for example, financial stability, utilization/length of stay, credentialing).

**Aggregate (measurement data):** Measurement data collected and reported by organizations as a sum or total over a given time period (e.g., monthly, quarterly), or for certain groupings (e.g., health care organization level).

**Ambulatory:** Patient walking without assistance (no help from another person) or walking throughout the day with the assistance of another person or assistive device; able to walk about, not bedridden or confined to bed.

**Angioplasty:** Reconstruction of blood vessels damaged by disease or injury.

**Antithrombotic therapy:** Pharmacologic agents (oral or parenteral) preventing or interfering with the formation of a thrombus or blood coagulation.

**Atherosclerosis:** Common disorder characterized by yellowish plaques of cholesterol, other lipids, and cellular debris in the inner layers of the walls of arteries.

**Atrial fibrillation:** Cardiac arrhythmia characterized by disorganized electrical activity in the atria accompanied by an irregular ventricular response that is
usually rapid. The atria quiver instead of pumping in an organized fashion, resulting in compromised ventricular filling and reduced stroke volume. Stasis of left atrial flow increases the risk of stroke.

**Atrial flutter:** Type of atrial tachycardia characterized by contraction rates between 230/min and 380/min.

**Clinical performance measures:** Measures designed to evaluate the processes or outcomes of care associated with the delivery of clinical services; allow for intra- and interorganizational comparisons to be used to continuously improve patient health outcomes; may focus on the appropriateness of clinical decision making and implementation of these decisions; must be condition specific, procedure specific, or address important functions of patient care (e.g., medication use, infection control, patient assessment, patient safety, etc.).

**Cholesterol reducing medication:** Pharmacologic agents (i.e., antilipidemic agents) that reduce the amount of cholesterol in the serum.

**Common cause variation:** Normal variation in any process; not indicative of a process that is out of statistical control.

**Continuous variable:** Aggregate data measure in which the value of each measurement can fall anywhere along a continuous scale (e.g., weight, age).

**Continuous variable statement:** Statement that describes the performance measure when numerator and/or denominator statements are not appropriate, such as a measure of central tendency (continuous variable).

**Contraindication:** Factor or condition that renders the administration of a drug or agent or the performance of a procedure or other practice inadvisable, inappropriate and/or undesirable.

**Data collection:** Act or process of capturing new or primary data from a single or number of sources. Also called “data gathering”.

**Data element:** Discrete piece of data (e.g., patient birth date, principal diagnosis).

**Data integrity:** Accuracy, consistency, and completeness of data.

**Data point:** Numeric value representing a set of observations or measurements at a specific time interval (e.g., perioperative mortality rate for the month of June, 2007).

**Data source:** Primary source document(s) used for data collection, (e.g., billing or administrative data, medical records, flowsheets, etc.),
**Denominator:** Lower part of a fraction used to calculate a proportion or ratio. Also, the proportion for a rate-based measure.

**Denominator statement:** Statement that depicts the population identified by the lower part of the performance measure (e.g., “Persons diagnosed with schizophrenia”).

**DVT prophylaxis:** Prevention of deep vein thrombosis through the use of prophylactic strategies. Non-pharmacologic approaches include early mobilization and use of intermittent pneumatic compression stockings. Pharmacologic approaches involve early anticoagulant therapy including the administration of subcutaneous unfractionated heparin, low-molecular-weight (LMW) heparins and heparinoids if there are no contraindications.

**Elective Carotid Endarterectomy:** Surgical procedure performed by choice, involving excision of atheromatous segments of the endothelium and tunica media of the carotid artery, leaving a smooth tissue lining and facilitating blood flow through the vessel; surgery done to prevent stroke.

**Elective Carotid Intervention:** Surgery (i.e, carotid endarterectomy) and other procedures (e.g., carotid angioplasty, stenting) involving the carotid artery, performed due to the patient’s choice.

**Emergency Medical System (EMS):** Network of services coordinated to provide aid and medical assistance from primary response to definitive care, involving personnel trained in the rescue, stabilization, transportation, and advanced treatment of traumatic or medical emergencies.

**Excluded population:** Detailed information describing the population(s) which should not be included in the numerator, denominator or continuous variable measure calculation, (e.g., specific age groups, diagnoses, procedures, enrollment periods, etc.).

**Flowchart:** Ordered sequence of data element retrieval and aggregation through which numerator and denominator events or continuous variable values are identified by a measure.

**Health status performance measures:** Measures that address the functional well-being of specific populations, both in general and in relation to specific conditions, demonstrating change over time (e.g., physical functioning, bodily pain, social functioning, mental health).

**Included population:** Detailed information describing the population(s) that the numerator and denominator, or continuous variable intends to measure, (e.g.,
specific age groups, diagnoses, procedures, enrollment periods, insurance and health plan groups, etc.).

**Intermittent pneumatic compression stockings:** Device that uses sequential and/or intermittent compression to counteract blood flow stasis by increasing peak flow velocity. As a result, less blood is allowed to pool in veins thus decreasing chances for thrombus formation. In addition compression has an anticlotting effect by increasing fibrolitic activity which in turn stimulates the release of plasminogen activator. These two physiological effects, in combination with the mechanical movement of fluid in a proximal direction make the sequential devices effective in preventing and treating DVT.

**Ischemic stroke:** Cerebrovascular disorder caused by deprivation of blood flow to an area of the brain, generally as a result of thrombosis, embolism, or reduced blood pressure.

**IV thrombolytic therapy:** Administration of a thrombolytic agent, such as tissue plasminogen activator (TPA), to dissolve an arterial clot.

**Low-density lipoprotein (LDL):** Plasma protein provided by the liver, containing relatively more cholesterol and triglycerides than protein. The high cholesterol content may account for its greater atherogenic potential. Also known as “bad cholesterol”.

**Measure information form (MIF):** Tool to provide specific and technical information on a measure. The information contained includes: measure set, measure I.D., performance measure name / short name, rationale, type of measure, improvement noted as, numerator/denominator/continuous variable statement(s), inclusions, exclusions, data elements, data collection approach, sampling, data reported as, report period, and selected references.

**Measure set:** A unique grouping of carefully selected measures that, when viewed together, provides a comprehensive understanding or assessment of a unit’s, department’s or organization’s performance

**Non-ambulatory:** Patient primarily confined to bed or only getting out of bed to the bedside commode; not able to walk about or mobilize their lower extremities.

**Numerator:** Upper portion of a fraction used to calculate a rate, proportion or ratio.

**Numerator statement:** Statement that depicts the portion of the denominator population that satisfies the conditions of the performance measure to an indicator event, (e.g., “Number of persons diagnosed with schizophrenia that report being homeless”).

11-4
Original source (of measure): An individual, group of individuals or an organization that is initially responsible for developing the measure.

Outcome measure: Measure that indicates the result of the performance (or non-performance) of a function(s) or process(es).

Paroxysmal: Occurring as sudden or periodic attacks or recurrences of symptoms of a disease; exacerbation.

Perception of care/services measures: Satisfaction measures that focus on the delivery of clinical care from the patient's/family's/caregiver's perspective, including but not limited to the following aspects of patient care: patient education, medication use, pain management, communication regarding plans and outcomes of care, prevention and illness, improvement in health status, etc. A measure may address one or more aspects of care.

Performance measure: Quantitative tool (e.g., rate, ratio, index, percentage) that provides an indication of an organization's performance in relation to a specified process or outcome.

Process measure: Measure which focuses on a process which leads to a certain outcome, meaning that a scientific basis exists for believing that the process, when executed well, will increase the probability of achieving a desired outcome.

Proportion: Type of rate in which the numerator is expressed as a subset of the denominator, (e.g., proportion of stroke patients receiving DVT prophylaxis).

Rate-based (measure): Aggregate data measure in which the value of each measurement is expressed as a proportion or as a ratio.

Ratio: Relationship between two counted sets of data, which may have a value of zero or greater. In a ratio, the numerator is not necessarily a subset of the denominator, (e.g., relapses to number of patients discharged from heroin detox program.

Rationale: Explanation of why an indicator is useful in specifying and assessing the process or outcome of care measured by the indicator. The rationale may include supportive evidence such as published literature, unpublished studies, focus group results, etc.

Reliability: Ability of an indicator to accurately and consistently identify the events it was designed to identify across multiple settings.

Special cause: Factor that intermittently and unpredictably induces variation over and above that inherent in the system. It often appears as an extreme point,
such as a point beyond the control limits on a control chart, or some specific, identifiable pattern in data.

**Standardized measure:** Performance measures that have precisely defined specifications and data collection protocols, meet established evaluation criteria, and can be uniformly adopted for use.

**Statin:** A class of pharmaceutical agents that modify LDL cholesterol by blocking the action of an enzyme in the liver which is needed to synthesize cholesterol, thereby decreasing the level of cholesterol circulating in the blood; HMG-CoA reductase inhibitors.

**Statistical Process Control (SPC):** Application of statistical techniques, such as control charts, to analyze a process or its output so as to take appropriate actions to achieve and maintain a state of statistical control and to improve the capability of the process.

**Stent:** Rod or threadlike device for supporting tubular structures during surgical anastomosis or for holding arteries open during angioplasty.

**Time last known well:** Time at which the patient was last known to be without the signs and symptoms of the current stroke or at his or her prior baseline. Variation may exist if the signs and symptoms are not witnessed. To reduce variation for data collection, refer to the definition(s) for the time last known well (also, date last known well) as specified in the data element dictionary.

**Tissue plasminogen activator (TPA):** Clot-dissolving substance produced naturally by cells in the walls of blood vessels, and also manufactured synthetically. TPA activates plasminogen to dissolve clots and is used therapeutically to open occluded arteries.

**Validity:** Ability to identify opportunities for improvement in the quality of care/service; demonstration that the indicator use results in improvements in outcomes and/or quality of care/service.

**Variation:** Differences in results obtained in measuring the same phenomenon more than once. The sources of variation in a process over time can be grouped into two major classes: common causes and special causes.

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## Appendices Table 1
### ICD-9-CM Principal Diagnosis Codes for Ischemic Stroke

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>433.01</td>
<td>OCCLUSION AND STENOSIS OF BASILAR ARTERY WITH CEREBRAL INFARCTION</td>
</tr>
<tr>
<td>433.10</td>
<td>OCCLUSION AND STENOSIS OF CAROTID ARTERY WITHOUT CEREBRAL INFARCTION</td>
</tr>
<tr>
<td>433.11</td>
<td>OCCLUSION AND STENOSIS OF CAROTID ARTERY WITH CEREBRAL INFARCTION</td>
</tr>
<tr>
<td>433.21</td>
<td>OCCLUSION AND STENOSIS OF VERTEBRAL ARTERY WITH CEREBRAL INFARCTION</td>
</tr>
<tr>
<td>433.31</td>
<td>OCCLUSION AND STENOSIS OF MULTIPLE AND BILATERAL PRECEREBRAL ARTERIES WITH CEREBRAL INFARCTION</td>
</tr>
<tr>
<td>433.81</td>
<td>OCCLUSION AND STENOSIS OF OTHER SPECIFIED PRECEREBRAL ARTERY WITH CEREBRAL INFARCTION</td>
</tr>
<tr>
<td>433.91</td>
<td>OCCLUSION AND STENOSIS OF UNSPECIFIED PRECEREBRAL ARTERY WITH CEREBRAL INFARCTION</td>
</tr>
<tr>
<td>434.00</td>
<td>CEREBRAL THROMBOSIS WITHOUT MENTION OF CEREBRAL INFARCTION</td>
</tr>
<tr>
<td>434.01</td>
<td>CEREBRAL THROMBOSIS WITH CEREBRAL INFARCTION</td>
</tr>
<tr>
<td>434.11</td>
<td>CEREBRAL EMBOLISM WITH CEREBRAL INFARCTION</td>
</tr>
<tr>
<td>434.91</td>
<td>CEREBRAL ARTERY OCCLUSION UNSPECIFIED WITH CEREBRAL INFARCTION</td>
</tr>
<tr>
<td>436</td>
<td>ACUTE, BUT ILL-DEFINED, CEREBROVASCULAR DISEASE</td>
</tr>
</tbody>
</table>
### Appendices Table 2
ICD-9-CM Principal Diagnosis Codes for Hemorrhagic Stroke

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>430</td>
<td>SUBARACHNOID HEMORRHAGE</td>
</tr>
<tr>
<td>431</td>
<td>INTRACEREBRAL HEMORRHAGE</td>
</tr>
</tbody>
</table>
# Appendices Table 3
## Cholesterol-Reducing Medications

<table>
<thead>
<tr>
<th>Medication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abitrate</td>
</tr>
<tr>
<td>Advicor</td>
</tr>
<tr>
<td>Altocor</td>
</tr>
<tr>
<td>Atorvastatin</td>
</tr>
<tr>
<td>Atorvastatin/amlodipine</td>
</tr>
<tr>
<td>Atromid-S</td>
</tr>
<tr>
<td>B-3-50</td>
</tr>
<tr>
<td>B3-500-Gr</td>
</tr>
<tr>
<td>Caduet</td>
</tr>
<tr>
<td>Cholestyramine</td>
</tr>
<tr>
<td>Cholestyramine Light</td>
</tr>
<tr>
<td>Choloxin</td>
</tr>
<tr>
<td>Clofibrate</td>
</tr>
<tr>
<td>Colesevelam</td>
</tr>
<tr>
<td>Colestid</td>
</tr>
<tr>
<td>Colestid Flavored</td>
</tr>
<tr>
<td>Colestipol</td>
</tr>
<tr>
<td>Crestor</td>
</tr>
<tr>
<td>Dextrothyroxine Sodium</td>
</tr>
<tr>
<td>Ezetimibe</td>
</tr>
<tr>
<td>Ezetimibe/simvastatin</td>
</tr>
<tr>
<td>Fenofibrate</td>
</tr>
<tr>
<td>Fluvastatin</td>
</tr>
<tr>
<td>Gemcor</td>
</tr>
<tr>
<td>Gemfibrozil</td>
</tr>
<tr>
<td>Lescol</td>
</tr>
<tr>
<td>Lescol XL</td>
</tr>
<tr>
<td>Lipitor</td>
</tr>
<tr>
<td>Locholest</td>
</tr>
<tr>
<td>Locholest Light</td>
</tr>
<tr>
<td>Lofibra</td>
</tr>
<tr>
<td>Lopid</td>
</tr>
<tr>
<td>Lorelco</td>
</tr>
<tr>
<td>Lovastatin</td>
</tr>
<tr>
<td>Mevacor</td>
</tr>
<tr>
<td>Niacin</td>
</tr>
<tr>
<td>Niacin ER</td>
</tr>
<tr>
<td>Niacin ER Starter Pack</td>
</tr>
<tr>
<td>Niacin Extended Release</td>
</tr>
<tr>
<td>Niacin SR</td>
</tr>
<tr>
<td>Niacin TD</td>
</tr>
<tr>
<td>Niacin TR</td>
</tr>
<tr>
<td>Table 3</td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td>Niacor</td>
</tr>
<tr>
<td>Niacor B3</td>
</tr>
<tr>
<td>Niaspan</td>
</tr>
<tr>
<td>Niaspan ER</td>
</tr>
<tr>
<td>Niaspan ER Starter Pack</td>
</tr>
<tr>
<td>Nico-400</td>
</tr>
<tr>
<td>Nicobid Tempules</td>
</tr>
<tr>
<td>Nicolar</td>
</tr>
<tr>
<td>Nicotinex</td>
</tr>
<tr>
<td>Nicotinic Acid</td>
</tr>
<tr>
<td>Pravachol</td>
</tr>
<tr>
<td>Pravachol/aspirin</td>
</tr>
<tr>
<td>Pravastatin</td>
</tr>
<tr>
<td>Pravastatin/aspirin</td>
</tr>
<tr>
<td>Pravigard</td>
</tr>
<tr>
<td>Pravigard PAC</td>
</tr>
<tr>
<td>Prevalite</td>
</tr>
<tr>
<td>Prevalite Powder</td>
</tr>
<tr>
<td>Probucol</td>
</tr>
<tr>
<td>Questran</td>
</tr>
<tr>
<td>Questran Light</td>
</tr>
<tr>
<td>Rosuvastatin</td>
</tr>
<tr>
<td>Simvastatin</td>
</tr>
<tr>
<td>Slo-Niacin</td>
</tr>
<tr>
<td>Tricor</td>
</tr>
<tr>
<td>Vytarin</td>
</tr>
<tr>
<td>Welchol</td>
</tr>
<tr>
<td>Zetia</td>
</tr>
<tr>
<td>Zocor</td>
</tr>
</tbody>
</table>
### Appendices Table 4
#### Statin Medications

<table>
<thead>
<tr>
<th>Statin Medication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crestor (Rosuvastatin)</td>
</tr>
<tr>
<td>Lescol (Fluvastatin)</td>
</tr>
<tr>
<td>Lescol XL (Fluvastatin XL)</td>
</tr>
<tr>
<td>Lipitor (Atorvastatin)</td>
</tr>
<tr>
<td>Mevacor (Lovastatin)</td>
</tr>
<tr>
<td>Pravachol (Pravastatin)</td>
</tr>
<tr>
<td>Advicor (Lovastatin/extended release Niacin)</td>
</tr>
<tr>
<td>Simcor (Simvastatin/extended release Niacin)</td>
</tr>
<tr>
<td>Vytorin (Ezetimibe/Simvastatin)</td>
</tr>
<tr>
<td>Zocor (Simvastatin)</td>
</tr>
</tbody>
</table>
Performance Measure Data Report # (--)  
Complete one report for each measure

PART I:

<table>
<thead>
<tr>
<th>Performance Measure Short Name:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Reporting Time Period</th>
<th>Number Numerator Cases</th>
<th>Number Denominator Cases</th>
<th>Measurement Results* (e.g., rate or value)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
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<tr>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Numerator/denominator cases are not applicable for Continuous Variable Measures. Report only measurement results in the form of a value.
PART II: Provide current information for this measure as follows:

<table>
<thead>
<tr>
<th>Have any modifications been made to this measure since the Measure Information Form was submitted?</th>
<th>[ ]Yes</th>
<th>[ ]No</th>
</tr>
</thead>
<tbody>
<tr>
<td>If this measure has been modified:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Describe the modifications and note when the change took place</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Note what prompted the need for the change</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE: If the measure has undergone significant reconstruction during the certification cycle, e.g., redefining of numerator and/or denominator, submit a revised Measurement Information Form. Please contact your Account Representative.

PART III:

Describe how data for this measure have been used to evaluate processes and/or patient outcomes of care.

Identify potential opportunities for improvement.

Describe any interventions and/or process modifications that may have been made based on measurement results and how the effectiveness of these changes were/will be measured.

Explain any significant variations occurring in the updated data submitted for this measure. This would include any interruption in continuous data collection or change in the normal pattern of the data, that is, those variations that may be attributable to a special cause.
Flowchart Symbols

Start/Stop denotes the beginning or end of an algorithm.

Diamonds represent "If...Then" decision points for logic tests and comparisons. Two or three flow lines exit the decision point to reflect alternative actions based upon an evaluation of the condition(s) stated around the decision point.

Rectangles or process boxes show when computation or manipulation of the data are required, such as a calculation or summarization.

Circle or "On-page: connectors, labeled with a letter, show a link to sections of the algorithm which are continued on the same page.

Five-sided or "Off-page" connectors, labeled with a letter, show a link to sections of the algorithm which are continued on different pages.

Note: Both circular, On-page, and five-sided, Off-page, Connectors containing the letters A, B, C, D, E, F, or G lead to measure Outcome Boxes.

Outcome Boxes represent the result of data passed through the algorithm. Connectors extending from outcome boxes lead to the end of the algorithm, or to risk adjustment procedures, where applicable. This symbol is also used to identify the strata within a stratified measure.

Symbol to represent comments that should be taken into account when programming flowchart.
Measure Contributor List

American Academy of Neurology, Stroke Practice Improvement Network (SPIN)
St. Paul, Minnesota

American Heart Association / American Stroke Association
Dallas, Texas

Centers for Disease Control and Prevention,
Division of Heart Disease and Stroke Prevention
Atlanta, Georgia

Georgia Hospital Association: An Association of Hospitals and Health Systems
Marietta, Georgia

The Joint Commission
Oakbrook Terrace, Illinois
## General Data Elements

<table>
<thead>
<tr>
<th>Manual Section</th>
<th>Impacts</th>
<th>Rationale</th>
<th>Description of Changes</th>
<th>Page</th>
<th>Implementation Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Dictionary</td>
<td>Discharge Status data element</td>
<td>Code change</td>
<td>Delete Code 41 &quot;Expired in medical facility, such as hospital, SNF, ICF, or freestanding hospice. Usage note: For use on Medicare and CHAMPUS (TRICARE) claims for hospice care.&quot; Add Code 70 &quot;Discharged/ transferred to another Type of Health Care Institution not Defined Elsewhere in this Code List (See Code 05)</td>
<td>Section 5, Page 27, 28</td>
<td>01/01/09</td>
</tr>
</tbody>
</table>

## Comfort Measures Only

<table>
<thead>
<tr>
<th>Manual Section</th>
<th>Impacts</th>
<th>Rationale</th>
<th>Description of Changes</th>
<th>Page</th>
<th>Implementation Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Dictionary</td>
<td>Comfort Measures Only data element</td>
<td>Abstraction clarification</td>
<td>Suggested Data Sources: Change “nurse practitioner” to “advanced practice nurse”</td>
<td>Section 5, Page 22</td>
<td>01/01/09</td>
</tr>
<tr>
<td>Data Dictionary</td>
<td>Comfort Measures Only data element</td>
<td>Abstraction clarification</td>
<td>Notes for Abstraction Add data abstraction guidelines for “comfort measures only by end</td>
<td>Section 5, Page 22</td>
<td>01/01/09</td>
</tr>
</tbody>
</table>
of hospital day two (i.e., if comfort measures only is documented by the end of hospital day two, select “Yes” for measures STK-1: DVT Prophylaxis and STK-5: Antithrombotic Therapy By End of Hospital Day Two. Documentation of comfort measures later than hospital day two = “No”.

<table>
<thead>
<tr>
<th>Data Dictionary</th>
<th>Comfort Measures Only data element</th>
<th>Abstraction clarification</th>
<th>Guidelines for Abstraction/Inclusion: Delete “V66.7 encounter for palliative care”.</th>
<th>Section 5, Page 23</th>
<th>01/01/09</th>
</tr>
</thead>
</table>

Admitted for Elective Carotid Endarterectomy

<table>
<thead>
<tr>
<th>Algorithm</th>
<th>Admitted for Elective Carotid Endarterectomy data element</th>
<th>Name change</th>
<th>Change “Admitted for Elective Carotid Endarterectomy” to “Admitted for Elective Carotid Intervention”</th>
<th>Section 4, Pages 4-3 &amp; 4-4</th>
<th>01/01/09</th>
</tr>
</thead>
</table>

Data Dictionary

<table>
<thead>
<tr>
<th>Data Dictionary</th>
<th>Admitted for Elective Carotid Endarterectomy data element</th>
<th>Data definition revision</th>
<th>Change “Admitted for Elective Carotid Endarterectomy” to “Admitted for Elective Carotid Intervention”</th>
<th>Section 5, Page 3</th>
<th>01/01/09</th>
</tr>
</thead>
</table>

Measure Information

<p>| Measure Information | Patients admitted for elective carotid endarterectomy Excluded Populations List | Clarification of populations excluded from the denominator | Change “Patients admitted for elective carotid endarterectomy” to “Patients admitted for elective carotid intervention” in list of excluded populations for all MIFs | Section 4 Pages 4-6, 10, 14, 18, 22, 26, 31, 34, 39, 43 | 01/01/09 |</p>
<table>
<thead>
<tr>
<th>Data Dictionary</th>
<th>Patient Ambulatory at End of Hospital Day Two data element</th>
<th>Abstraction clarification</th>
<th>Notes for Abstraction</th>
<th>Change</th>
<th>Section, Page</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5, 52</td>
<td>01/01/09</td>
</tr>
</tbody>
</table>

Change “Patients ambulating to and from the bathroom” to “Patients ambulating to and from the bathroom throughout the day with or without assistance of another person or assistive device”.

**Change** “Patient is only getting out of bed to the bedside commode (or up in chair)...” to “Patient is only transferred/getting out of bed to bedside commode (or up in chair/bed chair)...”

<table>
<thead>
<tr>
<th>Glossary</th>
<th>Ambulatory definition</th>
<th>Clarification of definition</th>
<th>Notes for Abstraction</th>
<th>Change</th>
<th>Section, Page</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>11, 1-1</td>
<td>01/01/09</td>
</tr>
</tbody>
</table>

Change “Patient walking without assistance (no help form another person);” to “Patient walking without assistance (no help form another person) or walking throughout the day with the assistance of another person or assistive device; able to walk about, not bedridden or confined to bed.”

<table>
<thead>
<tr>
<th>Data</th>
<th>DVT Prophylaxis</th>
<th>Abstraction clarification</th>
<th>Notes for Abstraction</th>
<th>Section, Page</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5,</td>
<td>01/01/09</td>
</tr>
<tr>
<td>Dictionary</td>
<td>Initiated by End of Hospital Day Two data element</td>
<td>Change “nurse practitioner” to “advanced practice nurse”</td>
<td>Page 29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Discharged on Antithrombotic Therapy**

<table>
<thead>
<tr>
<th>Measure Information</th>
<th>STK-2: Discharged on Antithrombotic Therapy</th>
<th>Clarification of populations excluded from denominator</th>
<th>Delete Patients who expired “from a medical facility” from the list of excluded populations. Retain “Patients who expired”. Change “Patients for whom discharge destination cannot be determined or missing” to “Patients for whom discharge destination cannot be determined or unknown”.</th>
<th>Section 4, Page 4-10</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Data Dictionary</th>
<th>Antithrombotic Therapy Prescribed at Discharge data element</th>
<th>Abstraction clarification</th>
<th>Notes for Abstraction Change “nurse practitioner” to “advanced practice nurse”</th>
<th>Section 5, Page 11</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Data Dictionary</th>
<th>Antithrombotic Therapy Prescribed at Discharge data element</th>
<th>Abstraction clarification</th>
<th>Guidelines for Abstraction/Exclusion: Add “Patients who are discharged only on low doses (5000 units subQ bid) of heparin or equivalent doses for DVT Prophylaxis using LMWH”</th>
<th>Section 5, Page 11</th>
</tr>
</thead>
</table>

**Patients with Atrial Fibrillation Receiving Anticoagulation Therapy**

<table>
<thead>
<tr>
<th>Measure Information</th>
<th>STK-3: Patients with Atrial Fibrillation</th>
<th>Clarification of performance measure name</th>
<th>Change “Patients with Atrial Fibrillation Receiving”</th>
<th>Section 4, Page 4-13</th>
</tr>
</thead>
</table>

01/01/09
<table>
<thead>
<tr>
<th>Algorithm</th>
<th>Measure Information</th>
<th>Measure Information</th>
<th>Data Dictionary</th>
<th>Data Dictionary</th>
<th>Data Dictionary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receiving Anticoagulation Therapy</td>
<td>Anticoagulation Therapy” to “Patients with Atrial Fibrillation / Flutter Receiving Anticoagulation Therapy”</td>
<td>Name change</td>
<td>Change “Atrial Fibrillation” data element name to “Atrial Fibrillation/Flutter”</td>
<td>Change “Atrial Fibrillation” data element name to “Atrial Fibrillation/Flutter”</td>
<td>Change “Atrial Fibrillation” data element name to “Atrial Fibrillation/Flutter”</td>
</tr>
<tr>
<td>STK-3: Patients with Atrial Fibrillation Receiving Anticoagulation Therapy</td>
<td>Change “The administration of antithrombotic therapy” to “The administration of anticoagulation therapy”.</td>
<td>Clarification of rationale</td>
<td>Add “Patients for whom discharge destination cannot be determined or unknown” to list of excluded populations</td>
<td>Add “(home or facility)” to exclusion “Patients discharged to hospice”.</td>
<td>Add “(home or facility)” to exclusion “Patients discharged to hospice”.</td>
</tr>
<tr>
<td>STK-3: Patients with Atrial Fibrillation Receiving Anticoagulation Therapy</td>
<td>Clarification of populations excluded from denominator</td>
<td>Notes for Abstraction</td>
<td>Notes for Abstraction</td>
<td>Notes for Abstraction</td>
<td>Notes for Abstraction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Change “nurse practitioner” to “advanced practice nurse”</td>
<td>Change “nurse practitioner” to “advanced practice nurse”</td>
<td>Change “nurse practitioner” to “advanced practice nurse”</td>
<td>Change “nurse practitioner” to “advanced practice nurse”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Change “NC (No, documented reason for not prescribing antithrombotic therapy&quot;</td>
<td>Change “NC (No, documented reason for not prescribing antithrombotic therapy&quot;</td>
<td>Change “NC (No, documented reason for not prescribing antithrombotic therapy&quot;</td>
<td>Change “NC (No, documented reason for not prescribing antithrombotic therapy&quot;</td>
</tr>
<tr>
<td>Data element</td>
<td>Abstraction clarification</td>
<td>Notes for Abstraction</td>
<td>Abstraction clarification</td>
<td>Notes for Abstraction</td>
<td>Section</td>
</tr>
<tr>
<td>--------------</td>
<td>--------------------------</td>
<td>----------------------</td>
<td>--------------------------</td>
<td>----------------------</td>
<td>---------</td>
</tr>
<tr>
<td>IV Thrombolytic Therapy Administered</td>
<td>Abstraction clarification</td>
<td>Delete “or clearly implied (e.g., contraindicated)” from sentence 1, paragraph 2</td>
<td>Abstraction clarification</td>
<td>Change “nurse practitioner” to “advanced practice nurse”</td>
<td>Section 5, Page 47</td>
</tr>
<tr>
<td>Antithrombotic Therapy by End of Hospital Day Two</td>
<td>Clarification of populations excluded from denominator</td>
<td>Add “Patients receiving comfort measures only by end of hospital day two”</td>
<td>Add “Patients admitted for the performance of elective carotid intervention” to list of excluded populations.</td>
<td>Add “Patients who received IV or IA thrombolytic therapy at your hospital or another hospital” as a new exclusion</td>
<td>Section 4, Page 4-22</td>
</tr>
<tr>
<td>Algorithm</td>
<td>STK-5: Antithrombotic Therapy Administered by End of Hospital Day Two</td>
<td>Add decision point</td>
<td>Add “Patient received IV/IA thrombolytic therapy?”</td>
<td>Section 4, Page 4-24</td>
<td>01/01/09</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Data Dictionary</td>
<td>Patient Received IV/IA Thrombolytic Therapy data element</td>
<td>Add data definition</td>
<td>Add definition for data element titled, “Patient Received IV/IA Thrombolytic Therapy”</td>
<td>Section 5, Page 54</td>
<td>01/01/09</td>
</tr>
<tr>
<td>Data Dictionary</td>
<td>Antithrombotic Therapy Administered by End of Hospital Day Two data element</td>
<td>Abstraction clarification</td>
<td>Notes for Abstraction Change “nurse practitioner” to “advanced practice nurse” Delete “thrombolytic therapy (tPA) administered within the past 24 hours”</td>
<td>Section 5, Page 9</td>
<td>01/01/09</td>
</tr>
<tr>
<td>Data Dictionary</td>
<td>Antithrombotic Therapy Administered by End of Hospital Day Two data element</td>
<td>Abstraction clarification</td>
<td>Guidelines for Abstraction/Exclusion: Add “Patients who are prescribed only low doses (5000 units subQ bid) of heparin or equivalent doses for DVT Prophylaxis using LMWH”</td>
<td>Section 5, Page 9</td>
<td>01/01/09</td>
</tr>
<tr>
<td>Measure Information</td>
<td>STK-6: Cholesterol Reducing Therapy Prescribed At Discharge</td>
<td>Name revision</td>
<td>Change “STK-6: Cholesterol Reducing Therapy Prescribed At Discharge” to “STK-6: Discharged on Statin Medication”</td>
<td>Section 4, Pages 4-25 to 4-28</td>
<td>01/01/09</td>
</tr>
<tr>
<td>Algorithm</td>
<td>STK-6: Cholesterol Reducing Therapy Prescribed At Discharge</td>
<td>Algorithm revision</td>
<td>Change “STK-6: Cholesterol Reducing Therapy Prescribed At Discharge” to “STK-6: Discharged on Statin Medication”.</td>
<td>Section 4, Page 4-29</td>
<td></td>
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<tr>
<td>Algorithm</td>
<td>STK-6: Discharged on Statin Medication</td>
<td>Add decision point</td>
<td>Add “Evidence of Atherosclerosis?”</td>
<td>01/01/09</td>
<td></td>
</tr>
<tr>
<td>Data Dictionary</td>
<td>Cholesterol Reducing Therapy Prescribed at Discharge data element</td>
<td>Data definition revision</td>
<td>Replace “Cholesterol Reducing Therapy Prescribed at Discharged” with “Statin Medication Prescribed at Discharge”.</td>
<td>01/01/09</td>
<td></td>
</tr>
<tr>
<td>Appendices</td>
<td>Medication Table</td>
<td>Medication table revision</td>
<td>Add “Appendices Table 4 Statin Medications”.</td>
<td>01/01/09</td>
<td></td>
</tr>
<tr>
<td>Data Dictionary</td>
<td>LDL Measured data element</td>
<td>Add data definition</td>
<td>Add definition for data element “LDL Measured”</td>
<td>01/01/09</td>
<td></td>
</tr>
<tr>
<td>Data Dictionary</td>
<td>Evidence of Atherosclerosis data element</td>
<td>Add data definition</td>
<td>Add definition for data element, “Evidence of Atherosclerosis”</td>
<td>01/01/09</td>
<td></td>
</tr>
<tr>
<td>Dysphagia Screening</td>
<td>STK-7: Dysphagia Screening</td>
<td>Clarification of performance measure name</td>
<td>Change “simple valid bedside testing protocol” to “evidence-based bedside testing protocol approved by the hospital”.</td>
<td>01/01/09</td>
<td></td>
</tr>
<tr>
<td>Data Dictionary</td>
<td>Dysphagia Screen data element</td>
<td>Abstraction clarification</td>
<td>Notes for Abstraction Delete “All patients except those with a known history of dysphagia should have</td>
<td>01/01/09</td>
<td></td>
</tr>
<tr>
<td>Data Dictionary</td>
<td>Dysphagia Screen data element</td>
<td>Abstraction clarification</td>
<td>Notes for Abstraction Delete &quot;or clearly implied&quot; from sentence 1, paragraph 2</td>
<td>Section 5, Page 31</td>
<td>01/01/09</td>
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<tr>
<td>Data Dictionary</td>
<td>Dysphagia Screen data element</td>
<td>Abstraction clarification</td>
<td>Notes for Abstraction Change “nurse practitioner” to “advanced practice nurse”</td>
<td>Section 5, Page 31</td>
<td>01/01/09</td>
</tr>
</tbody>
</table>

**Stroke Education**

<table>
<thead>
<tr>
<th>Measure Information</th>
<th>STK-8: Stroke Education</th>
<th>Clarification of performance measure name</th>
<th>Change “given education or educational materials during the hospital stay…” to “given education and/or educational materials during the hospital stay.” Change “medications prescribed” to “medications prescribed at discharge”.</th>
<th>Section 4, Page 4-33</th>
<th>01/01/09</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measure Information</td>
<td>STK-8: Stroke Education</td>
<td>Clarification of populations excluded from denominator</td>
<td>Add “Patients for whom discharge destination cannot be determined or unknown” to list of excluded populations Add “(home or facility)” to exclusion “Patients discharged to hospice”.</td>
<td>Section 4, Page-34</td>
<td>01/01/09</td>
</tr>
<tr>
<td>Measure Information</td>
<td>STK-8: Stroke Education</td>
<td>Algorithm clarification</td>
<td>Change “medications prescribed” to</td>
<td>Section 4, Page 4-36</td>
<td>01/01/09</td>
</tr>
<tr>
<td>Data Dictionary</td>
<td>Education Addresses Medication Prescribed data element</td>
<td>Clarification of definition</td>
<td>Change “medication prescribed” to “medication prescribed at discharge”.</td>
<td>Section 5, Page 37</td>
<td>01/01/09</td>
</tr>
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<tr>
<td><strong>Smoking Cessation / Advice / Counseling</strong></td>
<td></td>
<td></td>
<td><strong>Add</strong> “Patients for whom discharge destination cannot be determined or unknown” to list of excluded populations <strong>Add</strong> “(home or facility)” to exclusion “Patients discharged to hospice”.</td>
<td>Section 4, Page 4-39</td>
<td>01/01/09</td>
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<tr>
<td>Measure Information</td>
<td>STK-9: Smoking Cessation</td>
<td>Clarification of populations excluded from denominator</td>
<td><strong>Add</strong> “Patients for whom discharge destination cannot be determined or unknown” to list of excluded populations <strong>Add</strong> “(home or facility)” to exclusion “Patients discharged to hospice”.</td>
<td>Section 4, Page 4-43</td>
<td>01/01/09</td>
</tr>
<tr>
<td><strong>Assessed for Rehabilitation</strong></td>
<td></td>
<td></td>
<td><strong>Add</strong> “Patients for whom discharge destination cannot be determined or unknown” to list of excluded populations <strong>Add</strong> “(home or facility)” to exclusion “Patients discharged to hospice”.</td>
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<tr>
<td>Measure Information</td>
<td>STK-10: Assessed for Rehabilitation</td>
<td>Clarification of populations excluded from denominator</td>
<td><strong>Add</strong> “Patients for whom discharge destination cannot be determined or unknown” to list of excluded populations <strong>Add</strong> “(home or facility)” to exclusion “Patients discharged to hospice”.</td>
<td>Section 4, Page 4-43</td>
<td>01/01/09</td>
</tr>
<tr>
<td><strong>Glossary</strong></td>
<td></td>
<td></td>
<td>New definitions added</td>
<td>Add definitions for the following terms: angioplasty, atherosclerosis, elective carotid intervention, statin, stent</td>
<td>Section 11</td>
</tr>
<tr>
<td>Manual Section</td>
<td>Impacts</td>
<td>Rationale</td>
<td>Description of Changes</td>
<td>Page</td>
<td>Implementation Date</td>
</tr>
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<td>----------------</td>
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<tr>
<td><strong>General Data Elements</strong></td>
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<tr>
<td>Data Dictionary</td>
<td>Alphabetical Data Element List</td>
<td>Changes made by the National Uniform Billing Committee (NUBC)</td>
<td><strong>Replace</strong> data element, <em>Admission Source</em>, with data element, <em>Point of Origin for Admission or Visit</em></td>
<td>Section 5, Page 1</td>
<td>01/01/2008</td>
</tr>
<tr>
<td>Data Dictionary</td>
<td><em>Admission Source</em> data element</td>
<td>Changes made by the NUBC</td>
<td><strong>Delete</strong> <em>Admission Source</em></td>
<td>Section 5, Pages 3 &amp; 4</td>
<td>01/01/2008</td>
</tr>
<tr>
<td><strong>Point of Origin for Admission or Visit</strong></td>
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</tr>
<tr>
<td>Data Dictionary</td>
<td><em>Point of Origin for Admission or Visit</em> data element</td>
<td>Changes made by the NUBC</td>
<td><strong>Add</strong> <em>Point of Origin for Admission or Visit</em></td>
<td>Section 5, Pages 53 &amp; 54</td>
<td>01/01/2008</td>
</tr>
<tr>
<td>Measure Information</td>
<td>All Measures</td>
<td>Changes made by the NUBC</td>
<td><strong>Delete</strong> <em>Admission Source</em> from list of General Data Elements; <strong>Add</strong> <em>Point of Origin for Admission or Visit</em> to list of General Data Elements</td>
<td>Section 4, Pages 4-6; 4-10; 4-14; 4-18; 4-22; 4-30; 4-33; 4-38; 4-42</td>
<td>01/01/08</td>
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<tr>
<td><strong>Discharge Status</strong></td>
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<tr>
<td>Data Dictionary</td>
<td><em>Discharge Status</em> data element</td>
<td>Changes made by the NUBC</td>
<td><strong>Add</strong> &quot;usage Note&quot; to Value &quot;05&quot;: Cancer hospitals excluded from Medicare PPS and children’s hospitals are examples of such other types of health care</td>
<td>Section 5, Page 29</td>
<td>01/01/08</td>
</tr>
<tr>
<td>Stroke</td>
<td>Discharged on Cholesterol Reducing Medication</td>
<td></td>
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</tr>
<tr>
<td><strong>Data Dictionary</strong></td>
<td><strong>Cholesterol Reducing Therapy Prescribed At Discharge</strong> data element</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Abstraction clarification</td>
<td><strong>Add</strong> Notes for Abstraction -If documentation by a physician, nurse practitioner, or physician assistant is present in the chart that indicates that the stroke was not of an atherosclerotic origin or that the patient does not meet NCEP ATPIII criteria for lipid lowering therapy, select &quot;NC&quot;.</td>
<td></td>
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<tr>
<td>Section 5, Page 22</td>
<td>01/01/08</td>
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<tr>
<td><strong>Measure Information</strong></td>
<td><strong>STK-6: Cholesterol Reducing Therapy Prescribed At Discharge</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Rationale clarification</td>
<td><strong>Change</strong> &quot;Based on these guidelines, all patients with ischemic stroke should have lipid profile measurement performed within 48 hours of admission unless outpatient results are available from within the past 30 days. Treatment for secondary prevention should be initiated in the presence of LDL&gt;100 mg/dL, or continued for patients who were previously on lipid-lowering therapy and have an LDL&lt;100 mg/dL&quot; to &quot;Based on&quot;</td>
<td></td>
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<td></td>
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<tr>
<td>Section 4, Page 4-25</td>
<td>01/01/08</td>
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</table>
these guidelines, all patients with ischemic stroke should have lipid profile measurement performed within 48 hours of admission unless outpatient results are available from within the past 30 days. Treatment for secondary prevention should be initiated in patients who meet NCEP ATP III criteria in the presence of LDL> 100 mg/dL, or continued for patients who were previously on lipid-lowering therapy and have an LDL< 100 mg/dL.”

<table>
<thead>
<tr>
<th>Deep Vein Thrombosis (DVT) Prophylaxis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Data Dictionary</strong></td>
</tr>
<tr>
<td><em>Patient Ambulatory at End of Hospital Day Two</em> data element</td>
</tr>
<tr>
<td>Abstraction clarification</td>
</tr>
<tr>
<td><strong>Change</strong> Notes for Abstraction, “To compute end of hospital day two, count the day of admission as hospital day one.” to “To compute end of hospital day two, count the arrival date as hospital day one.”</td>
</tr>
<tr>
<td><strong>Section 5, Page 51</strong></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Thrombolytic Therapy Administered</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Measure Information</strong></td>
</tr>
<tr>
<td>STK-4: Thrombolytic</td>
</tr>
<tr>
<td>Flowchart clarification</td>
</tr>
<tr>
<td><strong>Add</strong> “ND” (= Time not documented or)</td>
</tr>
<tr>
<td><strong>Section 4, Page 4-20</strong></td>
</tr>
</tbody>
</table>

01/01/08
<table>
<thead>
<tr>
<th>Therapy Administered</th>
<th>unknown at the time treatment decision was made) to string “&gt; 2hrs → Stop. Not in population”.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessed for Rehabilitation</td>
<td>Add “07” to string of “Discharge Status” codes not included in population. Delete “07” from string of “Discharge Status” codes included in measure population. Add “43” to string of “Discharge Status” codes included in measure population.</td>
</tr>
<tr>
<td>Measure Information</td>
<td>STK-10: Assessed for Rehabilitation</td>
</tr>
<tr>
<td>Flowchart clarification</td>
<td>Section 4, Page 4-43</td>
</tr>
<tr>
<td>Antithrombotic Therapy by End of Hospital Day Two</td>
<td>Add Notes for Abstraction “Thrombolytic therapy administered within past 24 hours” to list of conditions or factors making the administration of antithrombotic therapy advisable, inappropriate and/or undesirable</td>
</tr>
<tr>
<td>Data Dictionary</td>
<td>Antithrombotic Therapy Administered by End of Hospital Day Two data element</td>
</tr>
<tr>
<td>Abstraction clarification</td>
<td>Section 5, Page 10</td>
</tr>
<tr>
<td>01/01/08</td>
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