



# **Minnesota Statewide Quality Reporting and Measurement System**

## **Data Submission Guide**

**Version 1.1**

**Release date: 4/19/2012**

**Emergency Department Stroke Registry  
Process of Care Indicators 2012  
(2011-2012 Dates of Service)**

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# Introduction

Minnesota's 2008 Health Reform Law requires the Commissioner of Health to establish a standardized set of quality measures for health care providers across the state. The goal is to create a uniform approach to quality measurement in Minnesota to enhance market transparency and improve health care quality. To implement the collection and reporting of quality measurement data, the Minnesota Department of Health (MDH) has developed the Minnesota Statewide Quality Reporting and Measurement System (created through Minnesota Rules, Chapter 4654). In 2012, the following two stroke indicators were added to hospital reporting requirements: (1) NIH stroke scale (NIHSS) performed in initial evaluation and (2) Door-to-imaging performed within 25 minutes or less. These data will be collected by MDH's Minnesota Stroke Registry program staff on behalf of the Minnesota Statewide Quality Reporting and Measurement System (SQRMS).

This guide includes sections on the following topics:

- Data submission options
- How to get started with data submission
- The 2012 stroke registry indicator specifications
- Case eligibility
- Data elements and field specifications

# Data Submission Options

## Data Submission Options Overview

The table below describes the three options available and various features, benefits, and limitations to each method of data submission for the two stroke measures for 2012.

Feature	MSR	MSRT Quality	MSRT Summary
Level of data submitted	Case-Level <sup>1</sup>	Case-Level	Summary (Numerator/Denominator)
Data submission frequency	Continuous	Continuous	Quarterly
Secure data submission	Yes	Yes	Yes
Indicator calculation?	Automatically calculated by MSRT and submitted to SQRMS	Automatically calculated by MSRT and submitted to SQRMS	Must be calculated by hospital prior to data submission
Reports available to hospital:	<ul style="list-style-type: none"> <li>• MDH Stroke Indicators</li> <li>• Acute Care Quality Measures</li> <li>• Other Quality of Care Indicators</li> <li>• Core Measures</li> </ul>	<ul style="list-style-type: none"> <li>• MDH Stroke Indicators</li> </ul>	<ul style="list-style-type: none"> <li>• MDH Stroke Indicators</li> </ul>
Live benchmarking	Yes	Yes	Yes
Ability to filter live reports on variables (e.g., gender, race, diagnosis, time period)	Yes, full	Yes, limited	No
Meets standards for stroke core measure reporting (to TJC or CMS)	Yes	No	No
Access to QI Resources offered by Minnesota Stroke Registry program <sup>2</sup>	Full	Limited	Limited
Primary source for case eligibility guidance	MSR Case Definition and Identification document	Data Submission Guidelines document (this document)	Data Submission Guidelines document (this document)
Estimated abstraction time per case	30-45 minutes <sup>3</sup>	5-10 minutes	5-10 minutes

### Option 1: Join the Minnesota Stroke Registry (MSR)

Option 1-a: Hospitals are welcome to join the Minnesota Stroke Registry (MSR) program at any time. Participating hospitals collect a full panel of data elements for the registry on all of their stroke and TIA patients, which include stroke core measures and other stroke quality of care measures – which include the two stroke registry quality indicators included in

<sup>1</sup> Hospitals participating in the Minnesota Stroke Registry are required to abstract data on hemorrhagic stroke patients in addition to ischemic stroke and TIA patients.

<sup>2</sup> QI resources and activities offered by the Minnesota Stroke Registry include performance improvement collaboratives, eligibility for mini-grant awards, and technical assistance consultations. While these services are available to all hospitals, priority is given to hospitals participating in the Minnesota Stroke Registry program.

<sup>3</sup> The Minnesota Stroke Registry collects data elements for core measures and additional quality of care data.

the Minnesota Statewide Quality Reporting and Measurement System (SQRMS). These data are entered into the Minnesota Stroke Registry Tool (**MSRT**), a secure, web-based data reporting platform, and are submitted to the MSR.

Option 1-b: Another data submission alternative for participating hospitals is to participate simultaneously in both the MSR and the American Heart Association Get With The Guidelines-Stroke (GWTG-S)<sup>®</sup> quality improvement program, in which they enter their data through the Patient Management Tool™ (**PMT**), a secure, web-based data platform developed by Outcome Sciences. Data for both programs (GWTG-S and MSR) need only be entered once into the PMT. Hospitals participating in both the GWTG-S and the MSR will need to authorize the data submitted to Outcome Sciences to be shared with the MSR. Use of the Patient Management Tool does require an annual fee.

Considerations: Participating MSR hospitals will have met the data reporting requirements for SQRMS, regardless of the data collection tool used (option 1-a or option 1-b described above). No additional data will need to be collected or submitted to fulfill the reporting requirements for the two stroke indicators. Hospitals must authorize the calculation and submission of the final summary data to the SQRMS by indicating so on the MSRT Registration Form. Participating MSR hospitals are able to generate “live” data reports on these two stroke quality indicators, but also on several additional quality of care data reports, and are able to benchmark their performance against other hospitals in the state.

NOTE: Hospitals participating in GWTG-S but *not* in the MSR program may meet SQRMS data submission requirements if they also a) ensure that when they run their quarterly reports, their queries meet case inclusion and exclusion requirements and b) submit their quarterly totals through MSRT Summary (described below in Option 3).

**NOTE: Participating MSR hospitals are required to follow the case eligibility guidance within the *MSR Case Definition and Identification* document and should disregard the case eligibility guidance within the *Data Submission Guidelines* document (this document). Both documents are located on the resources page of the Minnesota Stroke Registry Tool.**

### **Option 2: MSRT Quality**

With this option, hospitals submit a limited set of individual case-level data into the secure, web-based Minnesota Stroke Registry Tool (MSRT), through a special “module” named **MSRT Quality**. The MSRT Quality tool includes only the data elements used for calculating the two stroke indicators. Hospitals are still required to follow the indicator specifications for identifying the appropriate cases to be entered. They would then enter required data elements into the MSRT Quality tool. Some data elements (e.g., age, arrival time, last known well time) are also used to exclude ineligible patients if necessary. Hospitals that choose to use the MSRT Quality data submission option will have met the data reporting requirements for the Minnesota Statewide Quality Reporting and Measurement System (SQRMS) provided that they authorize the calculation and submission of the summary data to the SQRMS on the MSRT Registration Form.

Considerations: By selecting this option, users are able to run reports on these two indicators for the patients that they enter. In addition, hospitals using MSRT Quality will be able to do limited customization of these reports. (e.g., restricting time periods, filtering reports by gender, etc.) In March 2012, these hospitals will be able to compare themselves against other hospitals in the state in “real time.”

**Note: Currently, it is not possible within the MSRT to confirm a case count for a quarter. So, if your hospital has no cases to submit for a specific quarter, you do not need to do anything. We will soon be adding a check-box item that you will be able to check, to attest that your data for the quarter have been submitted (or that you actually have no cases to submit).**

### **Option 3: MSRT Summary**

Hospitals may choose to only submit summary data (e.g., numerators and denominators) for each indicator to MDH. They would generate their numerators (those who meet indicator goals) and denominators (the eligible patient population) using a software application (e.g., Excel) or another platform of their choosing. In order to do so, they would take responsibility

for correctly following the inclusion and exclusion criteria outlined in the measure specifications. Data are submitted once per quarter into a module of the MSRT, named **MSRT Summary**.

Considerations: In March 2012, hospitals using MSRT Summary will be able to compare their quarterly performance against other hospitals in the state. However, no other comparisons will be available, given the limited data that are submitted into MSRT Summary.

**Note: If your hospital has no cases to submit for a specific quarter, enter "0" for all of your numerators and denominators. We will soon be adding a check-box item that you will be able to check, to attest that your data for the quarter have been submitted.**

# Getting Started

## How do I get started?

1. Determine which submission method your hospital will use to submit data for the stroke indicators.
2. Submit a MSRT Registration Form to the Minnesota Stroke Registry program by **January 28, 2012** indicating the data submission option your hospital has selected.

Special note for hospitals currently participating in the Minnesota Stroke Registry as of December 1, 2011: you will by default be assigned to Option 1. However, you must still complete and submit a registration form so we have all of your current contact information.

*You may submit your Registration Form using one of three methods:*

1. Mail: Jacob Zdon, Minnesota Department of Health, P.O. Box 64882, St. Paul, MN 55164-0882
  2. Fax: Attention: Jacob Zdon, (651) 201-5800
  3. Scan/Email: [jacob.zdon@state.mn.us](mailto:jacob.zdon@state.mn.us)
3. You will receive an email confirmation with username and login information within two business days.
  4. Log into your MSRT account using your username and temporary password, and you will be prompted to immediately change your password. Your MSRT account is now active.

Your password must be a minimum of 8 characters and include a number, a symbol, and a capitalized letter.

5. You may begin submitting data on January 4, 2012. The first deadline for the stroke indicator data submission is February 15, 2012 for all eligible cases discharged between July 1, 2011 and September 30, 2011.

## How does my hospital join the Minnesota Stroke Registry? (Option 1)

1. If you indicate on your MSRT Registration Form that you would like to join the Minnesota Stroke Registry, you will be contacted by Albert Tsai, Program Director, with further instructions on how to enroll in the full program. Please visit [www.mnstrokeregistry.org](http://www.mnstrokeregistry.org) for more information. Questions may be directed to [albert.tsai@state.mn.us](mailto:albert.tsai@state.mn.us) or by phone (651-201-5413).
2. Hospitals choosing this option will be assigned a MSRT user account and you will be contacted to schedule a data abstraction training session immediately.



## How do I use the MSR Reports feature of the MSRT Quality Module?

1. Select the interval (Monthly, Quarterly, Annually, or Date Range) and range for the time period.
2. Select which report (“Documentation: NIHSS Scale Score” or “Door to Imaging”) from the drop down list of “Report Name”.
3. Select the report format you would like. (“On screen” or PDF)
4. Select the chart type for the report (Bar chart, Horizontal Bar Chart, Line Chart, Scatter Chart, Table Only).
5. Select “Run Report”. Your report will appear in a new window.
6. Other things to note:
  - a. Select the “Show” icon next to “Filters”, and the “filters” section appears.
    - i. You can filter your report by gender and by clinical diagnosis.
    - ii. To hide the filters section, select the “Hide” icon.
  - b. To clear all selections for a report, select the “Clear” icon.

The screenshot shows the 'Run QI Reports' interface within the MSRT Quality Module. The interface is divided into several sections:

- Facility**: A navigation bar at the top with tabs for Facility, Reports, and Resources.
- Reports Home**: A blue sidebar on the left.
- Run QI Reports**: The main content area, which includes:
  - TIME PERIOD**: A section with 'Interval' set to 'Monthly' and 'Range' set to 'January 2011 to January 2011'.
  - REPORT**: A section with 'Report Type' set to 'Quality Indicators', 'Report Name' set to '<-- Choose a report -->', 'Report Format' set to 'On Screen', 'Chart Type' set to 'Bar Chart', and 'Report Options' set to 'Filter'.
  - FILTERS**: A section with 'Gender' set to 'Both' and 'Diagnosis' set to 'Subarachnoid Hemorrhage', 'Intracerebral Hemorrhage', 'Ischemic Stroke', and 'Transient Ischemic Attack'. A 'Reset Filters' button is located to the right of the Gender dropdown.
  - Run Report**: A button at the bottom of the filters section.



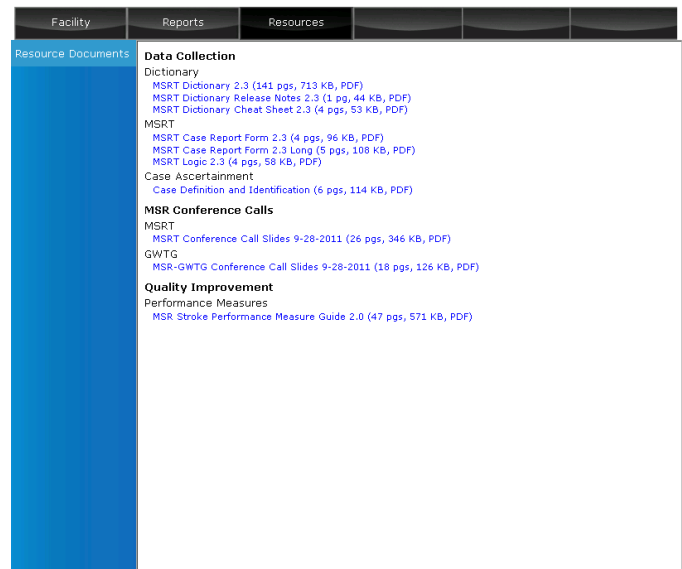
## How do I use the MSR Reports feature of the MSRT Summary Module?

1. Select the interval (Quarterly, Annually) and range for the time period.
2. Select which report (“Documentation: NIHSS Scale Score” or “Door to Imaging”) from the drop down list of “Report Name”.
3. Select the format you would like to see your report in (“On screen” or PDF)
4. Select the chart type for the report (Bar chart, Horizontal Bar Chart, Line Chart, Scatter Chart, Table Only).
5. Select “Run Report”
6. Other things to note:
  - a. To clear all selections for a report, select the “Clear” icon.

The screenshot shows the 'Run QI Reports' interface. At the top, there is a navigation bar with 'Facility', 'Reports', and 'Resources'. Below this is a 'Reports Home' sidebar. The main content area is titled 'Run QI Reports' and contains a 'Clear' link. Under 'TIME PERIOD', there is an 'Interval' dropdown set to 'Quarterly' and a 'Range' dropdown set to 'Q1 2011 to Q1 2011'. Under 'REPORT', there is a 'Report Type' dropdown set to 'Quality Indicators', a 'Report Name' dropdown set to 'Choose a report', a 'Report Format' section with radio buttons for 'On Screen', 'PDF', and 'CSV', and a 'Chart Type' dropdown set to 'Bar Chart'. A 'Run Report' button is located at the bottom of the form.

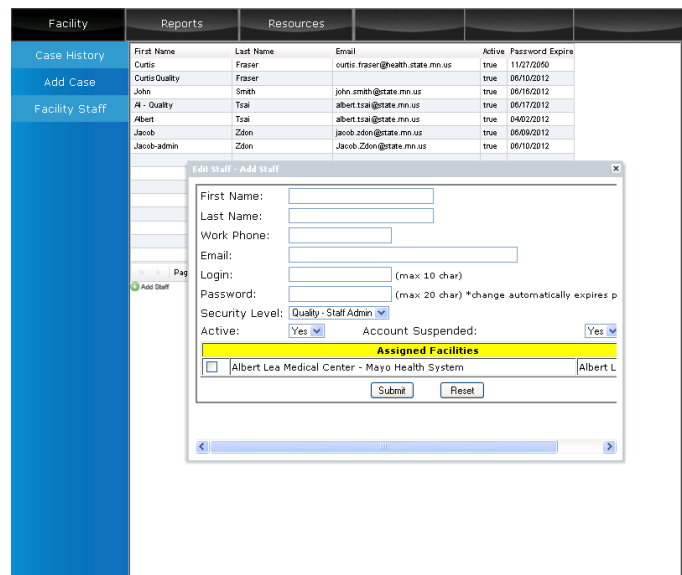
## Other features of the MSRT:

1. The “Resources” tab is where you find all abstraction support documents for the Minnesota Stroke Registry in PDF format.
  - a. Click on the blue document link to open the document.



2. The “Facility Staff” link under the Facility Tab allows you to create/manage your hospital’s MSRT accounts.

- a. To create a new account, select the “Add Staff” icon at the bottom left corner of the page.
- b. Enter the first name, last name, work phone number, email address, login, and a temporary password.
  - i. The login should be the first letter of the first name and as much of the last name that fits into the 10 character limit.
  - ii. The temporary password should be a minimum of 8 characters and include a number, a symbol, and a capitalized letter.
  - iii. The security level will be either defaulted to “MSRT-Summary: Staff Admin” or “MSRT-Quality: Staff Admin” depending upon which module your hospital is using.
- c. Set the “Active” field as “Yes” and the Account Suspended field as “No”.
- d. Check the box for the “Assigned Facility” (your hospital)
- e. Select “Submit”.



If you have any questions specifically about the MSRT, please contact Jacob Zdon, the Quality Assurance Coordinator of the Minnesota Stroke Registry by email ([jacob.zdon@state.mn.us](mailto:jacob.zdon@state.mn.us)) or by phone (651-201-5436).

# Indicator Specifications

<b>Indicator</b>	<b>NIH Stroke Scale (NIHSS) Performed in Initial Evaluation</b>											
<b>Description</b>	Indicator used to assess the percentage of adult stroke patients who had the NIHSS performed during their initial evaluation in the Emergency Department (ED).											
<b>Methodology</b>	Population identification is accomplished either prospectively via concurrent case identification through daily review of emergency department logs <b>or</b> via a query of the hospital discharge information to find cases for inclusion. Data elements are either extracted from an EMR system or abstracted through medical record review.											
<b>Rationale</b>	The NIHSS is used to understand stroke severity, and contributes to the determination of eligibility for thrombolytic treatment in ischemic stroke patients.											
<b>Measurement Period</b>	Data will be submitted on a quarterly basis on the following schedule for the 12 month measurement period:											
	<table border="1" style="width: 100%;"> <thead> <tr> <th style="width: 60%;">Discharge Dates</th> <th style="width: 40%;">Data Submission Deadline</th> </tr> </thead> <tbody> <tr> <td>Third Quarter, 2011: July 1 – September 30</td> <td>February 15, 2012</td> </tr> <tr> <td>Fourth Quarter, 2011: October 1 – December 31</td> <td>May 15, 2012</td> </tr> <tr> <td>First Quarter, 2012: January 1 – March 31</td> <td>August 15, 2012</td> </tr> <tr> <td>Second Quarter, 2012: April 1 – June 30</td> <td>November 15, 2012</td> </tr> </tbody> </table>	Discharge Dates	Data Submission Deadline	Third Quarter, 2011: July 1 – September 30	February 15, 2012	Fourth Quarter, 2011: October 1 – December 31	May 15, 2012	First Quarter, 2012: January 1 – March 31	August 15, 2012	Second Quarter, 2012: April 1 – June 30	November 15, 2012	
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First Quarter, 2012: January 1 – March 31	August 15, 2012											
Second Quarter, 2012: April 1 – June 30	November 15, 2012											
<b>Denominator:</b>	<p>All ischemic stroke and transient ischemic attack patients ages 18 years or older on the date of ED admission, regardless of whether the patient is admitted or transferred directly to another facility. The patient's last known well time must be present and within three and a half hours of hospital arrival time. Patients must also meet the following criteria:</p> <ul style="list-style-type: none"> <li>• Patients with documented final <i>clinical</i> diagnosis of stroke. This includes: <ul style="list-style-type: none"> <li>– Ischemic Stroke</li> <li>– Transient Ischemic Attack</li> <li>– Stroke (not otherwise specified)</li> </ul> </li> <li>• Patients whose ED visit was assigned a principal ICD-9-CM diagnosis code listed in Table 1. These ICD-9-CM codes include: <ul style="list-style-type: none"> <li>– The same codes for stroke core measure reporting as specified by The Joint Commission Specifications Manual 3.3 or as updated</li> <li>– Transient ischemic attack</li> </ul> </li> </ul>											

Indicator	NIH Stroke Scale (NIHSS) Performed in Initial Evaluation			
	<b>Table 1.</b>			
	Code	ICD-9 Diagnosis	TJC*	
	<b>ISCHEMIC STROKE</b>			
	433.01	OCCLUSION AND STENOSIS OF BASILAR ARTERY WITH CEREBRAL INFARCTION	X	
	433.10	OCCLUSION AND STENOSIS OF CAROTID ARTERY WITHOUT CEREBRAL INFARCTION	X	
	433.11	OCCLUSION AND STENOSIS OF CAROTID ARTERY WITH CEREBRAL INFARCTION	X	
	433.21	OCCLUSION AND STENOSIS OF VERTEBRAL ARTERY WITH CEREBRAL INFARCTION	X	
	433.31	OCCLUSION AND STENOSIS OF MULTIPLE AND BILATERAL PRECEREBRAL ARTERIES WITH CEREBRAL INFARCTION	X	
	433.81	OCCLUSION AND STENOSIS OF OTHER SPECIFIED PRECEREBRAL ARTERY WITH CEREBRAL INFARCTION	X	
	433.91	OCCLUSION AND STENOSIS OF UNSPECIFIED PRECEREBRAL ARTERY WITH CEREBRAL INFARCTION	X	
	434.00	CEREBRAL THROMBOSIS WITHOUT CEREBRAL INFARCTION	X	
	434.01	CEREBRAL THROMBOSIS WITH CEREBRAL INFARCTION	X	
	434.11	CEREBRAL EMBOLISM WITH CEREBRAL INFARCTION	X	
	434.91	CEREBRAL ARTERY OCCLUSION UNSPECIFIED WITH CEREBRAL INFARCTION	X	
	436	ACUTE BUT ILL-DEFINED CEREBROVASCULAR DISEASE	X	
	<b>TRANSIENT ISCHEMIC ATTACK</b>			
	435	TRANSIENT CEREBRAL ISCHEMIA		
	435.0	BASILAR ARTERY SYNDROME		
	435.1	VERTEBRAL ARTERY SYNDROME		
	435.2	SUBCLAVIAN STEAL SYNDROME		
	435.3	VERTEBROBASILAR ARTERY SYNDROME		
	435.8	OTHER SPECIFIED TRANSIENT CEREBRAL ISCHEMIAS		
	435.9	UNSPECIFIED TRANSIENT CEREBRAL ISCHEMIA Impending cerebrovascular accident Intermittent cerebral ischemia Transient ischemic attack [TIA]		
	* Codes indicated with an X in the column labeled "TJC" are explicitly listed in The Joint Commission Specifications Manual 3.3, Appendix A.1, Tables 8.1 and 8.2 (pages Appendix A.1: 104,105).			
	<b>OPTIONAL INCLUSION:</b>			
	Patients with documented <i>presumptive</i> clinical diagnosis of stroke on ED admission. This includes:			
	<ul style="list-style-type: none"> <li>- Ischemic Stroke</li> <li>- Transient Ischemic Attack</li> <li>- Stroke (not otherwise specified)</li> </ul>			
	<ul style="list-style-type: none"> <li>• Note: The presumptive admission diagnosis is sometimes different from the final clinical diagnosis. The presumptive diagnosis applies to transfer diagnosis, direct admission diagnosis, or ED discharge/hospital admission diagnosis. Patients who have a presumptive diagnosis of stroke or TIA but do not have a final clinical diagnosis of stroke MAY still be included, but are not required.</li> </ul>			
<p style="margin-left: 40px;">Example. Cases are identified in your hospital prospectively. The patient has an official diagnosis of "right-sided weakness"; he might have a presumptive admission diagnosis of stroke in the admission notes. Presumptive diagnosis reflects what diagnosis a patient is evaluated for from the perspective of medical personnel. This case should be identified as a possible case to be included. However, it is the decision of the hospital to include or exclude this case if the final clinical diagnosis is that this was not a stroke.</p>				
<b>SPECIAL NOTE:</b> Patients receiving tPA for stroke.				
Patients who receive tPA in the emergency department and are then transferred to another hospital for further care should be included in the registry of the transferring hospital, even though they are not admitted to that hospital. Use ICD-9-CM Procedure Code 99.10 to identify potential cases and include only if they were treated with thrombolytic therapy for ischemic stroke.				

Indicator	NIH Stroke Scale (NIHSS) Performed in Initial Evaluation
<b>Exclusions</b>	<ul style="list-style-type: none"> <li>• Patients admitted solely for elective carotid endarterectomy or any revascularization.</li> <li>• Patients who expire in the emergency department.</li> <li>• In-Hospital Stroke Patients: Patients experiencing a stroke while already admitted in the hospital for other reasons (“in-hospital stroke”).</li> <li>• Patients whose last known well time is missing.</li> <li>• Patients whose last known well time is greater than three and a half hours from hospital arrival time.</li> <li>• Patients whose symptoms have resolved which may be determined using any of the following criteria:               <ul style="list-style-type: none"> <li>a) NIHSS=0;</li> <li>b) documentation in the physician notes to the effect of “symptoms have resolved prior to arrival” or “patient has returned to baseline”; or</li> <li>c) the choice “symptoms resolved” is checked in the data element for reasons for non-treatment for thrombolytics</li> </ul> </li> </ul> <p>OPTIONAL EXCLUSIONS:</p> <ul style="list-style-type: none"> <li>• Patients sent home from the emergency department.</li> <li>• Patients that are admitted to an observation unit, 23-hour admission, or placed on “boarding” status.</li> <li>• Patients enrolled in a clinical trial related directly to stroke care.</li> </ul> <p>NOTE: Hospitals should be aware that should they choose to abstract data on patients in this optional exclusion list, no benchmarking or comparisons with other hospitals can be made on reports specifically including these patients.</p>
<b>Numerator</b>	<p>All ischemic stroke and transient ischemic attack patients ages 18 years or older on the date of ED admission, who meet the denominator criteria, receiving the NIHSS and documented in the patient record.</p>
<b>Suggested Data Sources</b>	<p>ED physician or nurses notes, ED Pathway, Acute physician or nursing notes, NIHSS documentation form, Acute Stroke Pathway Documentation forms</p>

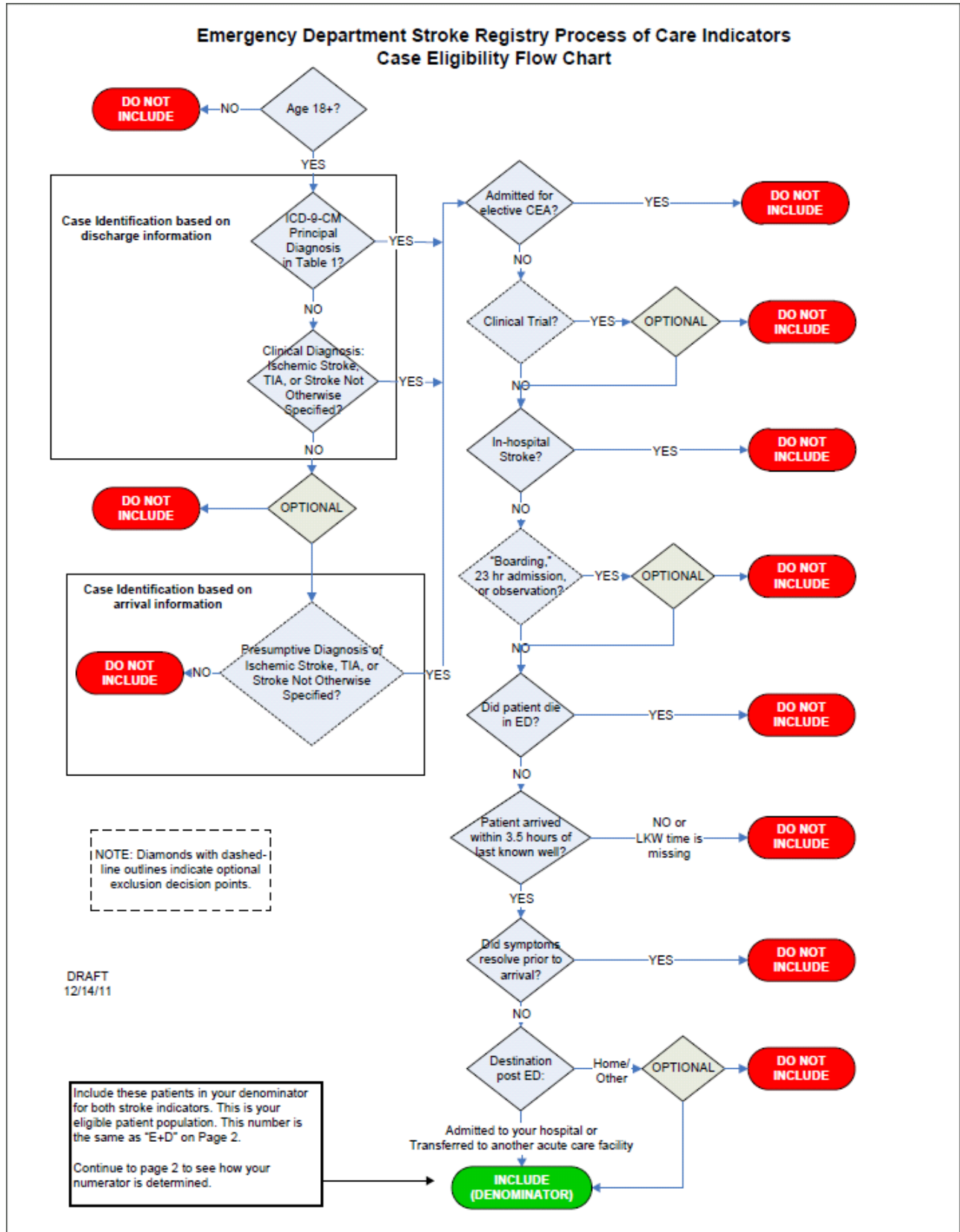
Indicator	<b>Door-to-Imaging Performed Time</b>											
<b>Description</b>	Indicator used to assess the percentage of adult stroke patients imaged in 25 minutes or less from their admission to the Emergency Department (ED).											
<b>Methodology</b>	Population identification is accomplished either prospectively via concurrent case identification through daily review of emergency department logs <b>or</b> via a query of the hospital discharge information to find cases for inclusion. Data elements are either extracted from an EMR system or abstracted through medical record review.											
<b>Rationale</b>	Rapid diagnosis of stroke subtype and possible contraindications to thrombolytic therapy needs to occur rapidly for administration of IV-tPA in the appropriate time window. Tracking whether imaging was performed may lead to streamlining of key care processes that might otherwise delay the initiation of thrombolytic therapy. Imaging should be completed within 25 minutes of arrival in the ED as this important diagnostic test could define the patient's eligibility for treatment. <sup>4</sup>											
<b>Measurement Period</b>	<p>Data will be submitted on a quarterly basis on the following schedule for the 12 month measurement period:</p> <table border="1" data-bbox="354 653 1450 947"> <thead> <tr> <th data-bbox="362 653 1049 709">Discharge Dates</th> <th data-bbox="1057 653 1442 709">Data Submission Deadline</th> </tr> </thead> <tbody> <tr> <td data-bbox="362 709 1049 766">Third Quarter, 2011: July 1 – September 30</td> <td data-bbox="1057 709 1442 766">February 15, 2012</td> </tr> <tr> <td data-bbox="362 766 1049 823">Fourth Quarter, 2011: October 1 – December 31</td> <td data-bbox="1057 766 1442 823">May 15, 2012</td> </tr> <tr> <td data-bbox="362 823 1049 879">First Quarter, 2012: January 1 – March 31</td> <td data-bbox="1057 823 1442 879">August 15, 2012</td> </tr> <tr> <td data-bbox="362 879 1049 947">Second Quarter, 2012: April 1 – June 30</td> <td data-bbox="1057 879 1442 947">November 15, 2012</td> </tr> </tbody> </table>		Discharge Dates	Data Submission Deadline	Third Quarter, 2011: July 1 – September 30	February 15, 2012	Fourth Quarter, 2011: October 1 – December 31	May 15, 2012	First Quarter, 2012: January 1 – March 31	August 15, 2012	Second Quarter, 2012: April 1 – June 30	November 15, 2012
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<b>Denominator:</b>	<p>All ischemic stroke and transient ischemic attack patients ages 18 years or older on the date of ED admission, regardless of whether the patient is admitted or transferred directly to another facility. The patient's last known well time must be present and within three and a half hours of hospital arrival time. Patients must also meet the following criteria:</p> <ul style="list-style-type: none"> <li>• Patients with documented final <i>clinical</i> diagnosis of stroke. This includes: <ul style="list-style-type: none"> <li>– Ischemic Stroke</li> <li>– Transient Ischemic Attack</li> <li>– Stroke (not otherwise specified)</li> </ul> </li> <li>• Patients whose ED visit was assigned a principal ICD-9-CM diagnosis code listed in Table 1. These ICD-9-CM codes include: <ul style="list-style-type: none"> <li>– The same codes for stroke core measure reporting as specified by The Joint Commission Specifications Manual 3.3 or as updated</li> <li>– Transient ischemic attack</li> </ul> </li> </ul>											

<sup>4</sup> Summers D, Leonard A, Wentworth D, Saver JL, Simpson J, Spilker JA, Hock N, Miller E, Mitchell PH; on behalf of the American Heart Association Council on Cardiovascular Nursing and the Stroke Council. Comprehensive overview of nursing and interdisciplinary care of the acute ischemic stroke patient: a scientific statement from the American Heart Association. *Stroke*. 2009;40:2911–2944.

Indicator	Door-to-Imaging Performed Time		
	<b>Table 1.</b>		
	Code	ICD-9 Diagnosis	TJC*
	<b>ISCHEMIC STROKE</b>		
	433.01	OCCLUSION AND STENOSIS OF BASILAR ARTERY WITH CEREBRAL INFARCTION	X
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	434.00	CEREBRAL THROMBOSIS WITHOUT CEREBRAL INFARCTION	X
	434.01	CEREBRAL THROMBOSIS WITH CEREBRAL INFARCTION	X
	434.11	CEREBRAL EMBOLISM WITH CEREBRAL INFARCTION	X
	434.91	CEREBRAL ARTERY OCCLUSION UNSPECIFIED WITH CEREBRAL INFARCTION	X
	436	ACUTE BUT ILL-DEFINED CEREBROVASCULAR DISEASE	X
	<b>TRANSIENT ISCHEMIC ATTACK</b>		
	435	TRANSIENT CEREBRAL ISCHEMIA	
	435.0	BASILAR ARTERY SYNDROME	
	435.1	VERTEBRAL ARTERY SYNDROME	
	435.2	SUBCLAVIAN STEAL SYNDROME	
	435.3	VERTEBROBASILAR ARTERY SYNDROME	
	435.8	OTHER SPECIFIED TRANSIENT CEREBRAL ISCHEMIAS	
	435.9	UNSPECIFIED TRANSIENT CEREBRAL ISCHEMIA Impending cerebrovascular accident Intermittent cerebral ischemia Transient ischemic attack [TIA]	
	* Codes indicated with an X in the column labeled "TJC" are explicitly listed in The Joint Commission Specifications Manual 3.3, Appendix A.1, Tables 8.1 and 8.2 (pages Appendix A.1: 104,105).		
	<b>OPTIONAL INCLUSION:</b>		
	Patients with documented <i>presumptive</i> clinical diagnosis of stroke on ED admission. This includes:		
	<ul style="list-style-type: none"> <li>- Ischemic Stroke</li> <li>- Transient Ischemic Attack</li> <li>- Stroke (not otherwise specified)</li> </ul>		
	<ul style="list-style-type: none"> <li>• Note: The presumptive admission diagnosis is sometimes different from the final clinical diagnosis. The presumptive diagnosis applies to transfer diagnosis, direct admission diagnosis, or ED discharge/hospital admission diagnosis. Patients who have a presumptive diagnosis of stroke or TIA but do not have a final clinical diagnosis of stroke MAY still be included, but are not required.</li> </ul>		
	<p style="margin-left: 40px;">Example. Cases are identified in your hospital prospectively. The patient has an official diagnosis of "right-sided weakness"; he might have a presumptive admission diagnosis of stroke in the admission notes. Presumptive diagnosis reflects what diagnosis a patient is evaluated for from the perspective of medical personnel. This case should be identified as a possible case to be included. However, it is the decision of the hospital to include or exclude this case if the final clinical diagnosis is that this was not a stroke.</p>		
	<b>SPECIAL NOTE:</b> Patients receiving tPA for stroke.		
Patients who receive tPA in the emergency department and are then transferred to another hospital for further care should be included in the registry of the transferring hospital, even though they are not admitted to that hospital. Use ICD-9-CM Procedure Code 99.10 to identify potential cases and include only if they were treated with thrombolytic therapy for ischemic stroke.			

Indicator	Door-to-Imaging Performed Time
<b>Exclusions</b>	<ul style="list-style-type: none"> <li>• Patients admitted solely for elective carotid endarterectomy or any revascularization.</li> <li>• Patients who expire in the emergency department.</li> <li>• In-Hospital Stroke Patients: Patients experiencing a stroke while already admitted in the hospital for other reasons (“in-hospital stroke”).</li> <li>• Patients whose last known well time is missing.</li> <li>• Patients whose last known well time is greater than three and a half hours from hospital arrival time.</li> <li>• Patients whose symptoms have resolved which may be determined using any of the following criteria: <ul style="list-style-type: none"> <li>a) NIHSS=0;</li> <li>b) documentation in the physician notes to the effect of “symptoms have resolved prior to arrival” or “patient has returned to baseline”; or</li> <li>c) the choice “symptoms resolved” is checked in the data element for reasons for non-treatment for thrombolytics</li> </ul> </li> </ul> <p>OPTIONAL EXCLUSIONS:</p> <ul style="list-style-type: none"> <li>• Patients sent home from the emergency department.</li> <li>• Patients that are admitted to an observation unit, 23-hour admission, or placed on “boarding” status.</li> <li>• Patients enrolled in a clinical trial related directly to stroke care.</li> </ul> <p>NOTE: Hospitals should be aware that should they choose to abstract data on patients in this optional exclusion list, no benchmarking or comparisons with other hospitals can be made on reports specifically including these patients.</p>
<b>Numerator</b>	All ischemic stroke and transient ischemic attack patients ages 18 years or older on the date of ED admission, who meet the denominator criteria, imaged in 25 minutes or less from the time of arrival to the hospital. Applicable imaging methods include Computerized Tomography (CT), Magnetic Resonance Imaging (MRI), or Magnetic Resonance Angiogram (MRA).
<b>Suggested Data Sources</b>	ED records, intake/face sheet/hospital admissions records, progress notes, acute physician notes, diagnostic reports, radiology notes

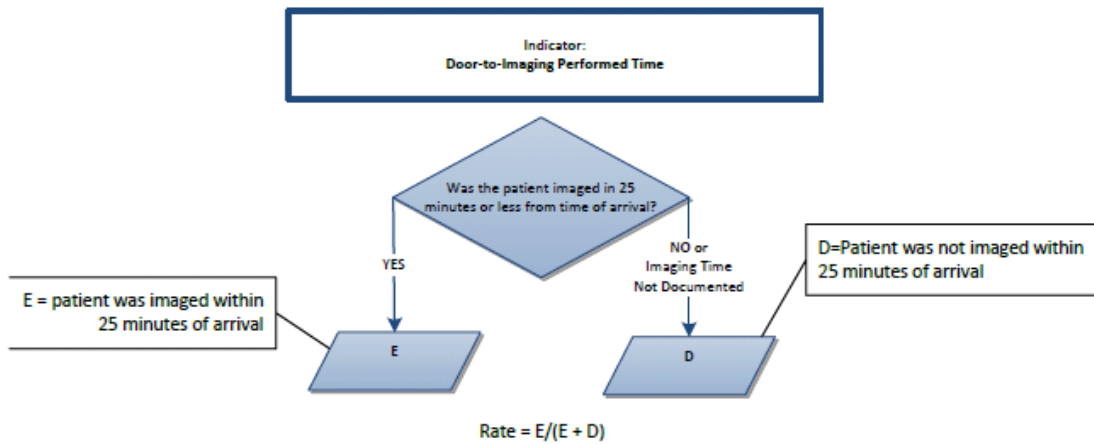
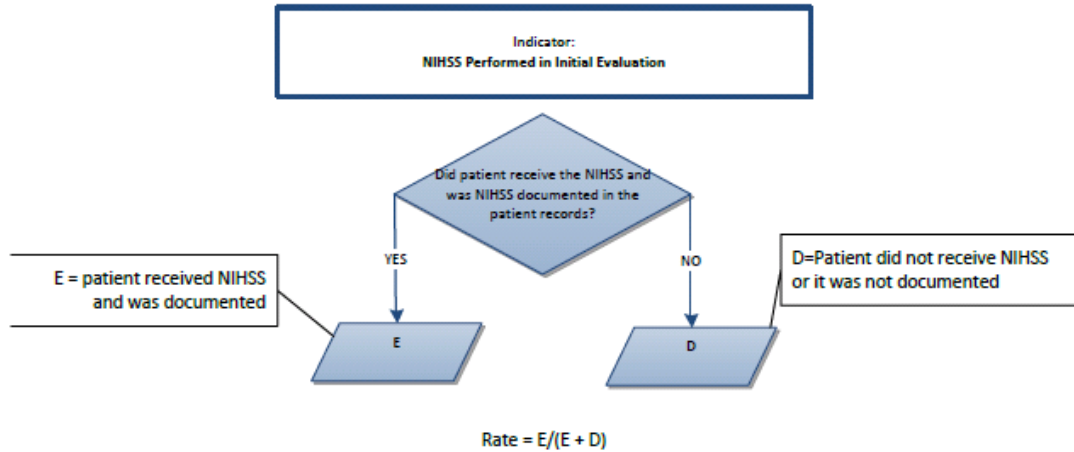
# Case Eligibility Flow Chart



# Case Indicator Flow Charts

## Emergency Department Stroke Registry Process of Care Indicators 2012

NOTE: ALL INDICATOR CALCULATION FLOW CHARTS BEGIN WITH THE INITIAL PATIENT POPULATION IDENTIFICATION (i.e., determining eligibility for indicator – see Page 1)



**KEY:**

E = Numerator (patients who passed the indicator)  
D = Patients who failed the indicator  
E + D = Denominator (eligible patient population)

## Data Elements and Field Specifications

Please note that the data elements and field specifications listed in this section are included to assist in your hospital's data collection and are not required to be included in your hospital's Summary Data Submission for the Minnesota Statewide Quality Reporting and Measurement System.

## **Patient ID**

Enter a case identifier.

### **Options:**

- Character field

### **Notes for Abstraction:**

1. Enter a unique identifier for this case.
  - a. It is your hospital's responsibility to devise a nomenclature for identifying cases.
  - b. The nomenclature should not be related to any personal identifiers (name, medical record number, social security number, etc.).
  - c. It is permissible to use the same case identifier for multiple stroke incidences of the same patient.
2. To change the patient identifier that has been already saved, select the "Edit PI" button and select "Yes" within the pop-up box that asks "Are you sure you want to edit your Patient Identifier?".

## **Arrival Date and Time**

Document the earliest date and time the patient arrived at the hospital for evaluation.

### **Options:**

- Date: MM/DD/YYYY
- Time: HH:MM [24-hour clock (military time)]

### **Notes for Abstraction:**

1. Medical record documentation from the suggested data sources should be carefully examined in determining the most correct date of arrival. Arrival date should not be abstracted simply as the earliest date in the acceptable sources, without regard to other (i.e., ancillary services) substantiating documentation. If documentation suggests that the earliest date in the acceptable sources does not reflect the date the patient arrived at the hospital, this date should not be used.
2. 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.
3. If the patient is in an outpatient setting of the hospital (e.g., undergoing dialysis, chemotherapy, cardiac catheterization) 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 the arrival date and time.
4. If the patient was admitted to observation from an outpatient setting of the hospital, use the date the patient presents to the ED or arrived on the floor for observation care as the arrival date.
5. If the patient was admitted to observation from the ED of the hospital, use the date the patient presented to the ED as the arrival date.
6. If the patient was a direct admit to observation, use the date and time of admission to observation for the arrival date and time.
7. For "Direct Admits" to the hospital, use the earliest time the patient arrives at the hospital.
  - a. If the patient is a "Direct Admit" to the catheter lab, as a transfer from another ED or acute care hospital, use the date the patient presents to the catheter lab as the arrival date.

**Examples:**

1. The patient arrived at the ED at 23:30 on 9/23/2009 and was admitted to the hospital at 00:30 on 9/24/2009. The arrival date and time is 9/23/2009 at 23:30.

**Suggested Data Sources:**

1. Use only the following acceptable sources:
  - a. Any ED documentation
  - b. Nursing admission assessment/admitting notes
  - c. Observation record
  - d. Procedure notes
  - e. Vital signs graphic record
2. For direct admission cases, the "Face Sheet" can also be used.

**Discharge or Transfer Date**

Record the date the patient was discharged or transferred from the hospital.

**Options:**

- Date: MM/DD/YYYY

**Notes for Abstraction:**

1. Record the date the patient was discharged or transferred.
  - a. The discharge/transfer date could be any one of the following:
    - i. The date that the patient is discharged from your institution's acute care unit
    - ii. The date of the patient's expiration
    - iii. The date patient left against medical advice (AMA)
    - iv. The date of transfer to a rehabilitation, skilled nursing, or hospice unit in your institution
    - v. The date of transfer to an acute in-patient unit outside of your own institution, even if that hospital is affiliated with your own hospital
2. Because this data element is critical in determining the population for all measures, the abstractor should not assume the UB-92/UB-04 claim information for the discharge date is correct. If the abstractor determines through chart review that the UB-92/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-92/UB-04 date.

**Examples:**

1. Patient is admitted to your in-patient neurology floor from your ED, with a diagnosis of acute ischemic stroke, on January 10, 2011. Due to extension of the infarct (need for jejunostomy and placement), the patient is still on the in-patient unit on January 30, 2011. The patient expires from complications of aspiration pneumonia on February 12, 2011. Enter 2/12/2011 for the discharge date.

**Suggested Data Sources:**

1. Discharge summary, progress notes, physician/nurses notes

## **Principal Discharge ICD-9-CM Diagnosis**

Record the principal diagnosis at the time of discharge or transfer.

### **Options:**

- Valid 5-digit ICD-9 code

### **Notes for Abstraction:**

1. Enter the principal diagnosis at the time of discharge or transfer.

### **Suggested Data Sources:**

1. Discharge summary, UB-04 or UB-92 forms

## **Clinical Diagnosis**

Determine the stroke related condition established after study to be chiefly responsible for occasioning the arrival of this patient to the hospital for care.

### **Options:**

- Intracerebral hemorrhage
- Subarachnoid hemorrhage
- Ischemic stroke
- Transient ischemic attack
- Stroke not otherwise specified
- No stroke related diagnosis

### **Notes for Abstraction:**

1. Select one of the six diagnosis options based on the clinical information found in the medical record.
  - a. This assignment of clinical diagnosis should be done independently of the ICD-9-CM code assigned.
2. Select "Intracerebral Hemorrhage" if the clinical hospital diagnosis related to stroke is an intracerebral hemorrhage.
  - a. Intracerebral hemorrhage is defined as a hemorrhage occurring within the cerebrum.
3. Select "Subarachnoid Hemorrhage" if the clinical hospital diagnosis related to stroke is a subarachnoid hemorrhage.
  - a. Subarachnoid hemorrhage is defined as a hemorrhage occurring within the space between the arachnoid and the pia matter through which the cerebrospinal fluid circulates.
4. Select "Ischemic Stroke" if the clinical hospital diagnosis related to stroke is an ischemic stroke.
  - a. An ischemic stroke is defined as a stroke caused by thrombosis or embolism.
  - b. Select "Ischemic Stroke" for patients who arrive with symptoms of stroke and have complete resolution after receiving IV-tPA medication.
  - c. Select "Ischemic Stroke" for patients who are documented as having "CVA" or "Stroke" in their medical record, without any additional documentation around stroke type, and who have no evidence of hemorrhage on initial brain imaging.

- d. Select "Ischemic Stroke" for patients who have transient symptoms that are present on arrival to the ED but resolve and then those symptoms later return during the hospitalization and subsequently meet criteria for ischemic stroke (symptoms > 24hrs, infarction on brain imaging).
5. Select "Transient Ischemic Attack" if the final hospital diagnosis related to stroke is a transient ischemic attack.
  - a. A transient ischemia attack is defined as a brief episode of cerebral ischemia that is usually characterized by blurring vision, slurring of speech, numbness, paralysis, or syncope that is predictive of a serious stroke.
6. Select "Stroke Not Otherwise Specified" if unable to determine the type of stroke from the documented final hospital diagnosis related to stroke.
  - a. If a CT scan or MRI is not done, select "Stroke Not Otherwise Specified".
  - b. If the interpretation of brain imaging is uncertain between ischemic and hemorrhagic stroke, select "Stroke Not Otherwise Specified."
7. Select "No Stroke Related Diagnosis" if the final hospital diagnosis is not a stroke diagnosis.

**Examples:**

1. A patient was admitted with ischemic stroke and was treated with IV-tPA. The patient developed complications of intracerebral hemorrhage. As documented by the attending physician, the final hospital diagnosis was ischemic stroke. However, the ICD-9-CM code is assigned as hemorrhagic stroke. Select "Ischemic Stroke".

**Suggested Data Sources:**

1. Discharge summary

**Age**

Enter the age of the patient.

**Options:**

- Numeric field with a range of  $18 \leq \text{###} \leq 130$

**Notes for Abstraction:**

1. Calculate age by determining the number of years between the admission date and the birth date.
  - a. For patients transferred from your emergency department to another hospital, calculate age by determining the number of years between the arrival date and the birth date.
  - b. 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 birth date is correct. If determined through chart review that the UB-04 day is incorrect, correct the downloaded value. If unable to determine the correct birth date through chart review, default to the UB-04 date of birth.
2. The "Calculate" link calculates age based on an entered birth date.
  - a. Select "Calculate"
  - b. Enter in the birth date by typing into the field provided or by selecting the calendar icon
  - c. Select "Calc"

**Suggested Data Sources:**

1. ED records, Face Sheet, Registration Forms, UB-04

**Gender**

Document the patient's biological gender.

**Options:**

- Male
- Female
- Unknown

**Notes for Abstraction:**

1. Select "Male" if the biological gender was determined to be male by the physician.
2. Select "Female" if the biological gender was determined to be female by the physician.
3. Select "Unknown" if the biological gender was determined to be neither male nor female (intersex) by the physician or if unable to determine the gender of the patient based upon the documentation within the medical record.
4. If there is conflicting documentation to the biological gender of the patient, use the self-identified gender of the patient.

**Suggested Data Sources:**

1. ED admissions document, intake form, face sheet, admissions notes, consultation notes, history and physical notes, nursing admission notes, progress notes, or UB-04

**Last Known Well Date and Time**

Determine the date and time at which the patient was last known to be at baseline health.

**Options:**

- MM/DD/YYYY
- HH:MM [24-hour clock (military time)]
- Unknown/ Not Documented/ UTD

**Notes for Abstraction:**

1. For the date and time of "Last Known Well", record the date and time of when the patient was last known to be at baseline health.
  - a. It is acceptable to determine the date and time of "Last Known Well" from a symptom onset that was either self-witnessed or witnessed by an individual other than the patient.
  - b. If the time of "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).
  - c. If a patient wakes up with symptoms, do not infer that symptom onset began when the patient awoke. Instead, determine the date and time the patient was last conscious and without symptoms for "Last Known Well".
  - d. In certain selected cases, patients may have transient symptoms which resolve and are later followed by symptoms that result in presentation to the hospital. If in the opinion of the physician,

the patient had several symptomatic episodes between which the patient returns completely to baseline, then use the onset time of the most recent episode as the date and time of “Last Known Well”.

- e. 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 of “Last Known Well”, use the time recorded according to the following hierarchy:
    - i. Stroke team/neurology
    - ii. Admitting physician
    - iii. Emergency department physician
    - iv. ED nursing notes
    - v. EMS
  - f. If the time of “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 “Last Known Well” time.
2. If the date or time of “Last Known Well” cannot be determined, select “Unknown/Not Documented/UTD”.

**Examples:**

1. On May 20, 2011, patient was gardening with her husband in their backyard when the patient noticed that her left arm went limp. She immediately told her husband and her husband noticed that the left side of her face was drooping. The husband drove his wife to the hospital. The husband stated it was 8:15 AM when the onset of symptoms occurred. Enter 5/20/2011 and 8:15 for the “Last Known Well” date and time.
2. On May 20, 2011, patient was gardening in her backyard when the patient noticed that her left arm went limp. According to the patient, it also felt as if the left side of her face was numb. She immediately went inside and called 911. The patient stated it was 8:15 AM when the onset of symptoms occurred. Enter 5/20/2011 and 8:15 for the “Last Known Well” date and time.
3. Patient woke up at 4:00 AM on May 20, 2011 with left sided paresis and an inability to speak according to his wife. Patient’s wife noted that the patient was normal when he went to bed at between 9:45 PM and 10:00 PM the night before. Enter 5/19/2011 and 21:45 for the “Last Known Well” date and time.
4. Patient woke up at 4:00 AM on May 20, 2011 with left sided paresis and an inability to speak according to his wife. Patient’s wife noted that the patient was normal when he went to bed last night. Select the “Unknown/ND/UTD” option for both the “Last Known Well” date and time.
5. Patient woke up at 4:00 PM on May 20, 2011 with left sided paresis and an inability to speak according to his wife. Patient’s wife noted that the patient was normal in the early afternoon prior to the nap but was unsure of exactly when the patient laid down to rest. Enter 5/20/2011 for the “Last Known Well” date and select the “Unknown/ND/UTD” option for “Last Known Well” time.
6. On May 20, 2011, the patient was gardening in her backyard when the patient noticed that the left side of her face went numb around 9:30 AM. After a minute or so, the numbness subsided and the patient continued to garden. At 10:30 AM, according to the patient, the numbness came back to the left side of her face and her left arm went limp. She went inside the house and called 911. Enter 5/20/2011 and 10:30 for the “Last Known Well” date and time .

### **Suggested Data Sources:**

1. ED records, intake/face sheet/hospital admissions records, progress notes, acute physician notes

### **Brain Imaging Performed**

Determine if a Computed Tomography (CT) Scan or Medical Resonance Imaging (MRI) was performed at this hospital as part of the initial evaluation of the patient.

#### **Options:**

- Yes
- No/Not Documented

#### **Notes for Abstraction:**

1. Select “Yes” if the initial brain image for the stroke event was performed at this hospital.
  - a. A carotid ultrasound does not qualify as “Yes”.
2. Select “No/Not Documented” if the patient did not receive any brain imaging at this hospital.

#### **Examples:**

1. A patient arrived at your hospital. A CT scan was done and showed the patient had significant hemorrhaging within the pre-frontal cortex of the brain. Select “Yes”.

### **Suggested Data Sources:**

1. ED records, intake/face sheet/hospital admissions records, progress notes, acute physician notes, diagnostic reports, radiology notes

### **Imaging Date and Time**

Enter **the documented** date and time **of image initiation of** the initial CT or MRI performed at this hospital.

#### **Options:**

- Date: MM/DD/YYYY
- Time: HH:MM [24-hour clock (military time)]
- Not Documented

#### **Notes for Abstraction:**

1. Enter the documented date and time of image initiation of the initial CT or MRI performed at this hospital.
  - a. The date and time of image initiation can be derived from the Digital Imaging and Communications in Medicine (DICOM) header information.
    - i. This information is printed on the hard copy of the film or available when reviewing the image digitally.
    - ii. DICOM (Digital Imaging and Communications in Medicine) is the industry standard for transferal of radiologic images and other medical information between computers. Patterned after the Open System Interconnection of the International Standards Organization, DICOM enables digital communication between diagnostic and therapeutic equipment and systems from various manufacturers. (Radiological Society of North America: [www.rsna.org/Technology/DICOM/index.cfm](http://www.rsna.org/Technology/DICOM/index.cfm), 2/10/2012)

b. If the date and time of image initiation is not documented, abstract the closest documented time after brain imaging initiation. In most cases, this would be the completion time of the brain imaging.

2. Select "Not Documented" if the date and time of image initiation or completion of the initial CT or MRI performed at this hospital is not documented.

**Examples:**

1. The ED nurses notes document that the CT scan was initiated at 10:30 in the morning of November 23, 2011. Enter the date and time of 11/23/2011 at 10:30.

**Suggested Data Sources:**

1. ED records, intake/face sheet/hospital admissions records, progress notes, acute physician notes, diagnostic reports, radiology notes

**NIH Stroke Scale (NIHSS) Performed**

Indicate if the NIHSS assessment was performed at this hospital by a physician or nurse during the initial physical evaluation of the case.

**Options:**

- Yes
- No/Not Documented

**Notes for Abstraction:**

1. Select "Yes" if the NIH stroke scale was performed at this hospital by a physician or nurse during the initial physical evaluation of the case.
2. Select "No/Not Documented" if the NIH stroke scale was not performed during the initial physical evaluation or there was no documentation of a NIHSS performed.
  - a. Select "No/Not Documented" if another stroke scale assessment (other than the NIHSS) was performed.
    - b. The Modified NIHSS does not count as the NIHSS and consequently "No/Not Documented" should be selected.
3. The NIHSS can be done on patients who have arrived unconscious or were in a coma. In order to learn more about the NIHSS on these patients, there are various online resources to learn more about this. Here is one: <http://learn.heart.org/ihtml/application/student/interface.heart2/nihss.html>