



# Minnesota Stroke Registry Case Definition and Case Identification Protocol

## Introduction

Case Identification is defined in this document as the methodology by which patient case records are identified for inclusion in and data collection for the Minnesota Stroke Registry (MSR), a Centers for Disease Control and Prevention (CDC) Paul Coverdell National Acute Stroke Registry (PCNASR) program. This document updates and replaces the document entitled “MSR Case Ascertainment Protocol and Case Definition Protocol.”

This document includes two chapters. Chapter 1 describes the Case Definition for inclusion of patient cases into the MSR database. The term “Case Definition” in this document describes the case inclusion and exclusion criteria used for defining cases to be included in the registry database. This definition particularly includes both the *clinical diagnoses* and *ICD-9 CM discharge codes*. Chapter 2 provides guidance on the methodology that hospitals participating in the MSR should follow in order to identify cases for abstraction. This methodology acknowledges that both prospective (concurrent) and retrospective case identification and data abstraction methods may be used by hospitals.

## Rationale for the Minnesota Stroke Registry Case Definition

There are two different guiding principles behind the Minnesota Stroke Registry Case Definition. The first principle addresses the issue of improving the system and the hospital infrastructure so that the *process* of patient triage, treatment and care is optimal for all patients – regardless of the final diagnosis. That is, whether all patients presenting to the hospital with a possible stroke are triaged and treated as efficiently as possible and according to current national guidelines, *regardless of their final diagnosis* upon discharge or transfer from the hospital.

The second guiding principle revolves on adherence to care guidelines specifically for stroke patients. That is, is whether patients with *confirmed stroke* are treated according to national guidelines. This is, in effect, the idea of measuring “performance”: how did hospitals *perform* on care specifically for patients who had a stroke?

These are subtle but important differences: the first principle focuses on the care process; the second focuses on the care received specifically by stroke patients. The emphasis a program places on either focus informs the utilization of a comprehensive (sensitive) ascertainment case finding methodology versus a selective (specific) methodology.

The Minnesota Stroke Registry program is interested in both improving systems for acute care overall AND the improving care in stroke patient population specifically. These goals are not mutually exclusive.

We understand that hospitals must also balance the intents and requirements of participating in multiple overlapping quality improvement or reporting programs (e.g., American Heart Association Get With The Guidelines (GWTG) – Stroke, The Joint Commission (that is, “core measures”), and the CDC PCNASR). With this in mind, we have established a case definition and case identification protocol in order to clarify the expectations of the Minnesota Stroke Registry, and at the same time address the needs of all three programs.

# CHAPTER 1: Case Definition

## Case Inclusions and Exclusions

### **Inclusions:**

1. **Patients age 18 and over on the date of admission.**
2. **Patients with documented final *clinical* diagnosis of stroke on hospital discharge.**
  - Subarachnoid Hemorrhagic Stroke
  - Intracerebral Hemorrhagic Stroke
  - Ischemic Stroke
  - Transient Ischemic Attack
  - Stroke (not otherwise specified)
3. **Patients whose hospitalizations are assigned a principal ICD-9-CM discharge diagnosis code listed in Table 1.**

These ICD-9-CM codes include:

  - a) The same codes for stroke core measure reporting as specified by The Joint Commission Specifications Manual 3.0
  - b) Transient ischemic attack
  - c) Strokes in pregnancy
  - d) Iatrogenic strokes
4. **OPTIONAL: Patients with documented *presumptive* clinical diagnosis of stroke on hospital admission.**
  - Subarachnoid Hemorrhagic Stroke
  - Intracerebral Hemorrhagic Stroke
  - Ischemic Stroke
  - Transient Ischemic Attack
  - Stroke (not otherwise specified)

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.

**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.

### **SPECIAL NOTE: 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.

Patients transferred to a participating Minnesota Stroke Registry hospital will also be included and abstracted by the final destination hospital. A single stroke event thus may end be represented twice in the registry (one record by the transferring hospital, one record by the receiving hospital). This is acceptable since the Minnesota Stroke Registry is not a surveillance registry, but a quality improvement program.

## Exclusions

1. **Patients admitted solely for elective carotid endarterectomy or any revascularization.**
2. **Patients who expire in the emergency department.**

### OPTIONAL EXCLUSIONS:

1. **In-Hospital Stroke Patients:**

Patients experiencing a stroke while already admitted in the hospital for other reasons (“in-hospital stroke”) may be entered into the database, but these are not required. Note that these cases will be excluded from all CDC performance measure calculations.

2. **Patients sent home from the emergency department.**

3. **Patients that are admitted to an observation unit, 23-hour admission, or placed on “boarding” status.**

Stroke and TIA patients who are ED observation patients, or boarding patients who are not formally admitted to the hospital are not required to be entered into the Minnesota Stroke Registry database, although their inclusion is encouraged as part of providing high-quality care for all stroke and TIA cases.

4. **Patients enrolled in a clinical trial related directly to stroke care.**

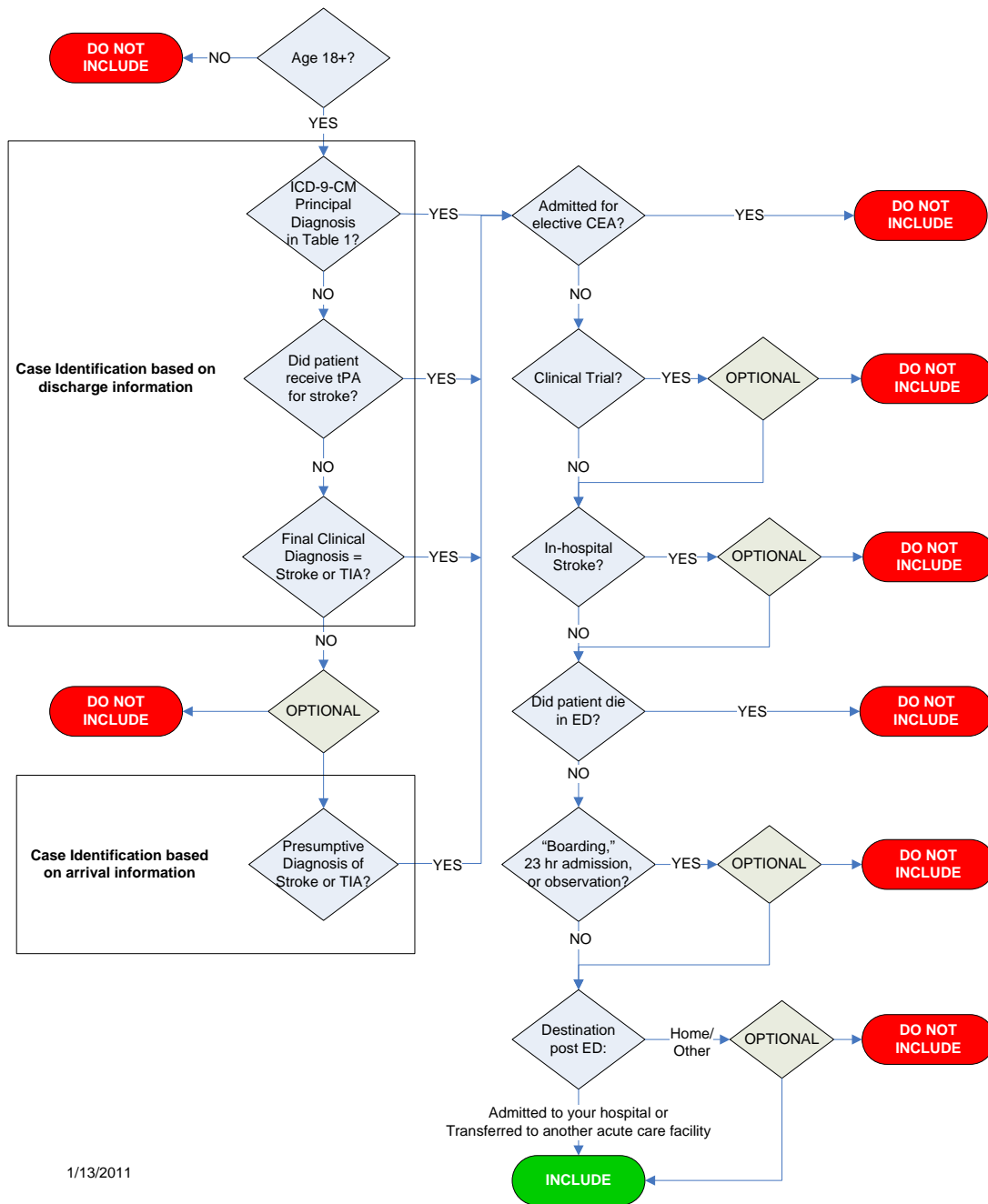
NOTE: Hospitals should be aware that should they choose to abstract data on patients in this optional exclusion list, no benchmarking or comparisons with other hospitals can be made on reports specifically including these patients.

**Table 1: ICD-9 CM codes, Minnesota Stroke Registry Case Definition**

Code	ICD-9 Diagnosis	TJC*
<b>HEMORRHAGIC STROKE</b>		
430	SUBARACHNOID HEMORRHAGE	X
431	INTRACEREBRAL HEMORRHAGE	X
<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]	
<b>STROKE IN PREGNANCY</b>		
671.5X	CEREBRAL VENOUS SINUS THROMBOSIS DURING PREGNANCY OR IN THE PUERPERIUM	
674.0X	CEREBROVASCULAR COMPLICATIONS OF THE PUERPERIUM	
<b>OTHER</b>		
997.02	IATROGENIC CEREBROVASCULAR INFARCTION OR HEMORRHAGE	

\* Codes indicated with an X in the column labeled "TJC" are explicitly listed in The Joint Commission Specifications Manual 3.2, Appendix A, Tables 8.1 and 8.2 (pages Appendix A-100).

# Minnesota Stroke Registry Case Definition



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## CHAPTER 2: Case Identification Protocol

The CDC Paul Coverdell National Acute Stroke Registry recommends that hospitals identify cases “prospectively” That is, a daily review of emergency department and admission logs is done to look for new admissions of stroke patients. This is also known as “concurrent” case identification to find cases for inclusion. However, we acknowledge that hospitals identify cases by querying the discharge information for patients who have already been discharged from the hospital. Our experience that it is most practical to identify cases for inclusion through both methods.

Hospitals are expected to utilize two methods to identify cases for inclusion and abstraction:

### 1. Review case logs.

Case logs should be reviewed from the following sources:

- Emergency Department
- Hospital Admissions
- Neurology Consults

Abstractors should review case logs for patients with presumptive (that is, admission) diagnosis of stroke or TIA daily if possible. If this is not feasible, review the logs as frequently as possible, and systematically review every day’s log sheets.

### 2. Obtain report from medical or billing records department of cases with ICD-9 CM principal diagnosis discharge code for stroke or TIA.

Abstractors should request a report from their medical or billing records departments that lists potential cases to be abstracted. This should ideally be done weekly if possible, otherwise monthly. Please refer to Table 1 for ICD-9-CM codes.

### **NOTE: Review case and procedure logs for all patients receiving tPA for stroke treatment.**

Abstractors should examine all cases in which tPA was administered for stroke patients, including transferred patients. These patients, if they are not already discovered through ED or admission logs, should be included.

#### **Contact the Minnesota Stroke Registry:**

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