PROGRAM GUIDE

MINNESOTA STROKE PROGRAM

Release Date: 7/18/2018

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Program Guide Overview

This Program Guide provides guidance to Minnesota hospitals on developing a stroke program and meeting requirements relating to the Minnesota Stroke Program at the Minnesota Department of Health.

Treatment of acute stroke is most successful through a purposefully planned and implemented system of coordinated care. This happens across a continuum – beginning in pre-hospital response, through emergency treatment, and post-discharge transitions of care. The Minnesota Department of Health is committed to working with medical care providers across the state to ensure that all stroke patients receive the most current medical treatments possible. This Program Guide addresses the activities and roles that hospitals can and must play in their part of this effort.

A successful hospital stroke program will include multiple components:

- Establishing a stroke program at your hospital
- Collecting and submitting data to the Minnesota Stroke Registry
- Getting designated as a stroke hospital, and assessing and improving performance
- Working with EMS
- Improving transitions of care for patients
- Raising awareness of stroke signs and symptoms in your community

This Program Guide will provide an overview of the expectations and requirements for each of these components. At the end of each chapter, reference materials are cited for more information. All of these materials are available for download from the program website: http://www.health.state.mn.us/stroke

Chapter 1: Getting Started: Establishing a Stroke Program at your Hospital

Hospitals that provide acute treatment play a central role in the statewide stroke system. In order to successfully provide treatment and care which meets current national standards, it is essential for a hospital to establish, develop, and maintain an organized program that ensures high quality care is provided to all stroke patients. This chapter describes the components of a hospital stroke program.

1. **Staffing and Program Structure**
   First, your program should identify a *Stroke Program Coordinator*. It is a role that is necessary in order for your program to be functional and successful.

   Second, your program should identify a *Stroke Medical Director*. This is a physician, physician's assistant, nurse specialist who serves as the champion for the stroke program and leads the clinical review of cases.

   Third, your program should form an *Acute Stroke Team*. Sometimes, existing infrastructure can be used to respond to strokes in the emergency department, as you would for other time-critical emergencies, but whichever group responds needs to receive specialized stroke education as well. Members should include an attending physician, emergency department nurse, pharmacy technician or pharmacist, laboratory technician, radiology technologist, radiologist, and the stroke coordinator.

   Fourth, your program should have a *multi-disciplinary stroke committee* that meets at least monthly to conduct case review, review performance metric data, and discuss quality improvement and training issues. Representatives and leaders from multiple departments should participate on this committee. These departments should include emergency department, nursing, radiology, laboratory, pharmacy, quality, and EMS.

2. **Stroke Code Process**
   Your response to emergent stroke patients should be driven and directed by a formal protocol. This protocol should address the process that occurs when a patient comes into the ED by EMS or as a walk-in, responsibilities of each team member, acute management of patients and consideration of thrombolytic and endovascular care. This stroke protocol should be reviewed annually and updated accordingly. This should be done in collaboration with the facility to which you transfer patients, ensuring your process works well and is reflective of best practices.

3. **Telestroke**
   Your hospital may consult via video or telephone with a stroke neurologist for diagnostic support and treatment options on stroke patients. This "tele-stroke" process can be crucial in ensuring that the most appropriate treatment is delivered to the patient. When working with a telestroke provider, it is important that all processes are outlined, including: when the consultant should be contacted; how quickly the connection can be expected to be made; the frequency and format of patient case review that will be provided by the consulting stroke

specialist; and what kind of training will be expected, initially and regularly.

4. **Minnesota Stroke Registry Reporting**
   All hospitals are required to submit data to the Minnesota Stroke Registry. (See Chapter 2.) These data are used to assess performance on quality of care metrics. These metrics are available for each hospital to use for program planning. MDH monitors quality metrics to identify areas of need for each hospital as well as evaluate the impact of the statewide stroke system. Contact MDH for assistance in meeting these data submission requirements.

5. **Quality/Performance Improvement**
   It is essential to collect data on your patient care processes in order to be able to understand opportunities for improvement and monitor your performance. These include data that are used for quality metrics (see Minnesota Stroke Registry above), but also other performance improvement metrics that describe opportunities for reducing time to treatment and appropriate actions in the diagnosis, treatment, and transport of acute stroke patients.

   Patient data should be tracked and collected on all patients for which a stroke code was called – that is, when the acute stroke team was assembled. Whether or not the patient ends up with a stroke as a diagnosis, every stroke code activation is an opportunity to review your process.

   Patient data should then be reviewed regularly by the stroke coordinator and the stroke committee. These cases should be presented in case reviews, in which the care processes are reviewed to find opportunities for improvement. In addition, we encourage you to provide feedback to your stroke team, including EMS, on what happened to your patient – those that did in fact have an acute stroke and those that did not – and on your patients overall (in aggregated reports). This feedback is crucial towards supporting improvements in your process.

6. **Patient follow-up (transitions of care)**
   Following discharge from the hospital, stroke patients often need assistance transitioning home and continuing their health care. Transitions planning starts in the hospital. Hospitals should develop a process for contacting patients and/or their caregivers. Needs that may be addressed include assistance with medication reconciliation, scheduling primary care visits, and addressing other non-medical issues. Hospitals are encouraged to collect patient data at approximately 30 days post-discharge using a survey that addresses patient status on quality metrics developed by the Centers for Disease Control. (See Chapter 5, Transitions of Care)

7. **Public/Community Awareness**
   Hospitals play an important role in the health of their local communities, including educating their patients, caregivers, and the people in their community on the signs and symptoms of stroke and the importance of calling 9-1-1. (See Chapter 6, Public Awareness)

***Program Contact**: Albert Tsai (651) 201-5413, albert.tsai@state.mn.us*

Chapter 2: Collecting and submitting data to the Minnesota Stroke Registry

All acute treatment hospitals in Minnesota are required to submit case-level stroke patient data to the Minnesota Stroke Registry, operated by the Minnesota Department of Health. The Minnesota Stroke Registry is the quality of care data repository which serves multiple purposes. First, it is the official database for required statewide quality reporting on stroke measures. Second, the Minnesota Department of Health participates in the CDC Paul Coverdell National Acute Stroke Registry; the Minnesota Stroke Registry is the state's repository for the national registry. Third, hospitals which are designated by the Minnesota Department of Health as Acute Stroke Ready Hospitals, Primary Stroke Centers, or Comprehensive Stroke Centers are required to collect and track patient data for performance improvement. The Minnesota Stroke Registry is the standard platform for this performance data tracking to acute stroke ready hospitals.

Case Definition

All patients that received a final clinical diagnosis of acute stroke (ischemic, subarachnoid hemorrhage, or intracerebral hemorrhage) or transient ischemic attack. This diagnosis may be assigned in the medical record notes or based on an ICD-10 principal or secondary diagnosis code.

Note: for conducting performance improvement case reviews, patients for which a stroke code/alert was called should have their data recorded. The *Minnesota Stroke Portal* is a free and robust system for collecting data and outputting case-level review reports for this purpose. As such, **acute stroke ready hospitals** should also submit data into the Minnesota Stroke Registry on a) all patients that received a stroke-related diagnosis, b) activated stroke alerts/codes, or both. Only cases that are confirmed to be strokes or transient ischemic attacks will be included in performance measure report calculations.

Reporting Deadlines

All stroke registry data are required to be submitted according *at a minimum* to the following schedule:

Discharge or Transfer Date	Deadline for Submission
Quarter 1 – January 1 through March 31	August 15
Quarter 2 – April 1 through June 30	November 15
Quarter 3 – July 1 through September 30	February 15
Quarter 4 – October 1 through December 31	May 15

The minimum requirement is for data to be submitted by the deadlines above for each quarter. However, we strongly recommend that stroke patient data are collected and reported continuously, rather than all at once at the end of each quarterly reporting period. Your stroke program committee should be reviewing your data on a monthly basis (at a minimum) in order to ensure that adjustments to process or training can happen in a timely fashion. This will allow patient care to be optimized quickly, as well as allow you to track improvements sooner than if you are only collecting data once a quarter.

Performance Measures

MDH publicly reports two sets of performance measures on all hospitals.

Stroke Consensus Performance Metrics

1. STK-1: Venous Thromboembolism Prophylaxis
2. STK-2: Discharged on Antithrombotic Therapy
3. STK-3: Anticoagulation Therapy for Atrial Fibrillation/Flutter
4. STK-4: Thrombolytic Therapy
5. STK-5: Antithrombotic Therapy by the end of Hospital Day 2
6. STK-6: Discharged on Statin Medication
7. STK-7: Dysphagia Screening
8. STK-8: Stroke Education
9. STK-9: Smoking Cessation Counseling
10. STK-10: Assessed for Rehabilitation

Statewide Quality Reporting and Measurement System (SQRMS)

1. Door to Imaging Initiated < 25 minutes
2. Time to Intravenous Thrombolytic Therapy < 60 minutes

Reporting Methods

Hospitals have two options for methods for submitting their case level data to MDH.

First, all individuals have a single, unique account in the *Minnesota Stroke Portal,* in which their access to their hospital is authorized by the stroke coordinator. Once given access, users enter stroke cases into the Minnesota Stroke Registry. This account is free of charge. Please see the *Minnesota Stroke Portal Guide* for details on setting up a user account, navigating the system, and submitting data.

Second, hospitals may choose to voluntarily participate in the American Heart Association's Get With The Guidelines-Stroke™ program. Patient-level data are abstracted (collected) in the same way, but reported into the Patient Management Tool™, operated by IQVIA. With the permission of the hospital, the Minnesota Department of Health accesses a copy of the hospital's case level data once a month and imports those data into the Minnesota Stroke Registry. No personal identifiers are collected by the Minnesota Department of Health.

Chart Audits

The Minnesota Department of Health receives funding from the CDC Paul Coverdell National Acute Stroke Program. (The current program funding period is 2015-2020.) Per our cooperative agreement with CDC, the Minnesota Stroke Program submits case-level registry data to CDC quarterly. These data do not include any patient/personal identifiers, and no hospital identifiers are included.

As part of this cooperative agreement, MDH is required to audit a sample of case records for every participating hospital. Therefore, every hospital submitting data to the Minnesota Stroke Registry must comply with this auditing requirement. A maximum of ten (10) case records are re-abstracted (audited)

per calendar year of data. These data are abstracted a third party vendor who is authorized by the Minnesota Department of Health to receive and abstract patient medical records. All personal identifiers are redacted or removed from these records. A report on the percent agreement for re-abstracted data elements is provided to MDH and the hospital. Due to resource and capacity limitations, hospitals are audited approximately once every two years.

For more information:

- MDH Statewide Quality Reporting and Measurement System http://www.health.state.mn.us/healthreform/measurement/measures/index.html
- CDC Paul Coverdell National Acute Stroke Program https://www.cdc.gov/dhdsp/programs/stroke_registry.htm

Registry Reference Guides:

- *Minnesota Stroke Registry Abstraction Manual*
- *Minnesota Stroke Registry Data Dictionary*
- *Minnesota Stroke Portal Navigation Guide*

***Registry Contact**: Allyson Fujii, allyson.fujii@state.mn.us or (651) 201-3934*

All program documents are available for download from the program website:
http://www.health.state.mn.us/stroke

Chapter 3: Stroke Hospital Designation

In 2013, the Minnesota Department of Health was granted authority to designate hospitals as Acute Stroke Ready Hospitals, Primary Stroke Centers, or Comprehensive Stroke Centers through Minnesota Statute 144.494. This is a voluntary designation program. All hospitals that wish to be designated as an Acute Stroke Ready Hospital must meet standards which were originally developed by the Minnesota Acute Stroke System Planning Committee in 2013 which were aligned with Brain Attack Coalition recommendations. Hospitals that are certified by nationally recognized accreditation organizations [i.e., The Joint Commission, Det Norske Veritas (DNV), or Heathcare Facilities Accreditation Program (HFAP)] are designated by the Minnesota Department of Health with the same level of stroke center certification.

The first round of designations occurred starting in 2014. In 2017, The Acute Stroke Ready Hospital standards were refined and clarified by the Minnesota Department of Health. Designations are valid for three years.

Standards (Criteria)

The following are the criteria that must be met by hospitals:

1. Acute stroke team available or on-call 24/7
2. Written stroke protocols or algorithms for acute treatment in the emergency department
3. Written plan and letter of cooperation with emergency medical services regarding triage and communication that are consistent with regional patient care procedures
4. Education on identification and treatment of acute stroke for all acute stroke team members
5. Capacity to complete basic laboratory tests 24 hours a day, 7 days a week
6. Capacity to perform and interpret brain injury imaging 24 hours a day, 7 days a week
7. Demonstrated collection of data and utilization of data for performance improvement
8. Transfer protocols and agreements for stroke patients, indicating consideration of 24/7 neurosurgery and endovascular therapy
9. Designated stroke program leadership team, including a stroke coordinator and medical director

Designation Application

In order to apply for designation, hospitals must submit an electronic application on the *Minnesota Stroke Portal*. The application for Acute Stroke Ready Hospital designation requires documentation to be submitted relating to each of the criteria. In order to submit an application, a representative from your hospital must have an account on the Minnesota Stroke Portal. Typically, this is the stroke program coordinator for your hospital.

In order to facilitate a successful application, the Minnesota Department of Health provides technical assistance for all applicants. Hospitals applying for re-designation will be contacted by MDH staff prior to the end of their current designation period. As standards and documentation requirements have changed since the first round of designations, it is imperative that you work with MDH to ensure that you understand the new standards and requirements. Hospitals applying for the first time should contact MDH at least six months prior to the application deadline in order to ensure that you understand the application process and requirements.

A hospital that is certified as an Acute Stroke Ready Hospital, Primary Stroke Center, or Comprehensive Stroke Center by a nationally recognized accreditation organization [The Joint Commission, Det Norske Veritas (DNV), or Healthcare Facilities Accreditation Program (HFAP)] must submit a copy of their certification certificate and a letter from their chief administrator through the MN Stroke Portal application. These hospitals will receive designation that is valid for three years or until the certification is valid, whichever is less.

For more information:

- *Reference Guide for Acute Stroke Ready Hospital Designation*
- *Acute Stroke Ready Hospital Checklist for Designation*

Designation Contact: *Eileen White, (651) 201- 4095, eileen.white@state.mn.us*

Site Visits

Hospitals host a site visit following their approval for Acute Stroke Ready Hospital designation. The purpose of this site visit is to help develop and improve a designated facility's stroke program verify the components described in an approved application. This visit will occur any time during the three-year designation period following your designation approval/effective date. Beginning in 2020, these site visits will conducted prior to approval for designation, as part of the designation process.

The site visit is conducted by a clinical stroke expert contracted by the Minnesota Department of Health. In addition, one staff member from the Minnesota Department of Health facilitates the visit. The visit includes an introductory session, tour of the facility, patient case review tracer activity, data and performance improvement session, and closing session. The stroke coordinator and stroke medical director are required to participate in this visit. Additional staff that should be invited to attend the opening and closing sessions include representatives from the emergency department, laboratory, pharmacy, radiology, quality department, stroke registry abstractor (if different from stroke coordinator) and EMS.

For more information: *Hospital Resource Guide: ASRH Designation Site Visits*

- Minnesota Statute 144.492-144.494 (https://www.revisor.mn.gov/statutes/cite/144.493)
- Minnesota Stroke System – list, map, and information about designated hospital http://www.health.state.mn.us/divs/healthimprovement/programs-initiatives/in-healthcare/strokesystem.html

Site Visits Contact: *Michelle Gray Ansari, (651) 201-4097, michelle.gray.ansari@state.mn.us*

All program documents are available for download from the program website:
http://www.health.state.mn.us/stroke

Chapter 4: EMS

The Minnesota Department of Health is working directly with emergency medical services (EMS) agencies to ensure that their pre-hospital protocols for acute stroke patients are up to date; provide opportunities for training; and facilitate connections with hospitals. We encourage coordination, communication, and collaboration between hospitals and their local EMS agencies.

Hospitals are encouraged to work with EMS in the following ways:

- Work with EMS on what the **protocol** will be for stabilization, transportation, and pre-notifying the hospital and/or activating a stroke code while en route
- Provide **feedback** to EMS regarding the treatment and results of their patients, on both individuals and in aggregate reports
- Include and involve EMS in your regular multi-disciplinary **committee** meetings
- Work with your local EMS agencies to ensure that the **incident run sheet/record** is provided to the appropriate staff so that information can be entered into the hospital's medical record and abstracted for case review and registry reporting
- Support and/or provide **training** on stroke to EMTs and paramedics

For more information:

- MDH Stroke Program: EMS
  http://www.health.state.mn.us/divs/healthimprovement/programs-initiatives/in-healthcare/strokeems.html

Guides and Tools:

- EMS Stroke Toolkit
- EMS Sample pre-hospital stroke protocol
- EMS Sample post-IV alteplase transfer protocol

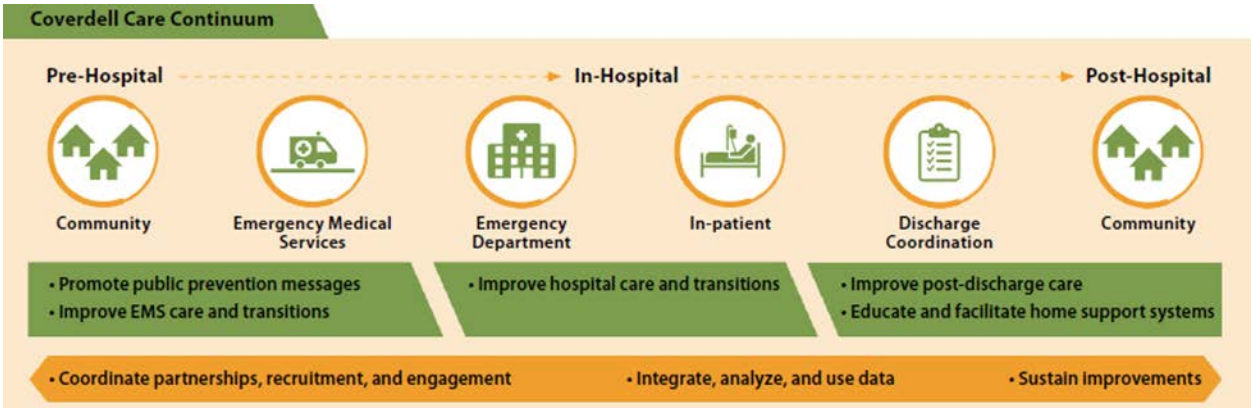
EMS Contact: *Catherine Johnson, (651) 201-4094, catherine.johnson@state.mn.us*

All program documents are available for download from the program website:
http://www.health.state.mn.us/stroke

Chapter 5: Transitions of Care

Transitioning patients between care settings requires coordination between health professionals. This coordination makes sure that a patient's health and personal needs are met, and that the right person is delivering the right care and services at the right time. Creating a smooth transition for stroke patients from hospital discharge to their homes and communities requires building connections between hospitals, post-acute facilities, home care agencies, clinics, and community-based organizations.

Hospitals play an important part in ensuring the transition for patients from hospital to home is smooth.



Hospitals are asked to voluntarily conduct the following transitions of care activities:

- Conduct post-discharge follow-up (telephone calls) on patients, for two purposes:
    - Assess patient health status and needs, coordination of care, and assist with scheduling follow-up appointments with primary care clinic, rehabilitation services, social services and other providers. Monitor patient follow-through on actions as outlined in the discharge plan.
    - Collection of data at approximately 30 days post-discharge on key indicators related to patient's health status, post-discharge care and outcomes. MDH will work with the hospital to find a method for submitting their case level data. Options include but are not limited to: entering data into a survey instrument unique to the hospital and exporting data to MDH; building the survey into your EHR and exporting data to MDH; or using American Heart Association's Get With The Guidelines-Stroke™ Patient Management Tool (described previously).
- Implement quality improvement (QI) activities that encourage successful transitions for stroke patients and support a smooth transition of the patient's care between hospital and their post-discharge providers (e.g., primary care, neurology, etc.). Examples: improving patient education materials; developing a transitions of care summary in the EHR; providing blood pressure cuffs and/or blood pressure monitoring education in the hospital; and scheduling post-discharge appointments with primary care provider prior to hospital discharge.

For more information:

- MDH Stroke Program: Transitions of Care
  http://www.health.state.mn.us/divs/healthimprovement/programs-initiatives/in-healthcare/transitions.html

- Minnesota Stroke Association/Brain Injury Alliance
  Resource Facilitators provide free, two-year telephone support assisting people in navigating life after stroke as they transition back to family life, work, school and community. Individuals can be referred by a professional or self-refer at any time. Provides access to bilingual staff and access to interpreters.
  https://www.braininjurymn.org/support/resourceFac.php

Transitions of Care Contact: *Erica Fishman, (651) 201-4093, erica.fishman@state.mn.us*

All program documents are available for download from the program website:
http://www.health.state.mn.us/stroke

Chapter 6: Public Awareness

There is a large percentage of the general public that remains uneducated about the signs and symptoms of stroke. Hospitals play an important role in the health of their local communities, including educating their patients, caregivers, and the people in their community.

There are several methods of communicating with and educating the public about stroke. The Minnesota Department of Health has an ongoing awareness campaign, "Every Second Counts." This campaign aims to raise the awareness of the signs and symptoms of stroke and promote the use of 9-1-1 when someone is having a stroke.

The Every Second Counts campaign materials are available to any health care organization across the state, including hospitals, rehabilitation facilities, local public health agencies, and others. We have a Stroke Communications Toolkit available that is a guide to the campaign and how your organization can use our various graphic files and materials. This guide walks you through a variety of different public awareness activities you can implement in your community, and for each activity, there is a corresponding graphic file that is available to download as well. We designed the guide to be useful and accessible for all sizes of facilities and organizations, regardless of their marketing resources or experience with implementing a public awareness campaign. These materials are available for you to use free of charge.

For more information:

MDH Stroke Program
http://www.health.state.mn.us/divs/healthimprovement/programs-initiatives/in-healthcare/every-second-counts.html

Guides and Tools:

- *Every Second Counts Public Awareness toolkit*
- *Every Second Counts Graphic Images*

Public awareness contact: *Claire Fleming, (651) 201-5274, claire.fleming@state.mn.us*

All program documents are available for download from the program website:
http://www.health.state.mn.us/stroke

Stroke Program Checklist

Required Actions (all hospitals)

- ☐ Inform MDH of key personnel changes at your facility (i.e., staff departures, change in roles, or are new staff are assigned roles in your program)
- ☐ Assign one staff to be your stroke program coordinator. This does not need to be an official title.
- ☐ Collect and submit stroke patient data to the Minnesota Stroke Registry
    - Provide medical records for chart audits upon request
- ☐ Complete the annual hospital stroke capacity inventory survey

Required Actions (for designated hospitals)

- ☐ Apply for Acute Stroke Ready Hospital designation (or re-designation)
- ☐ Form a multi-disciplinary stroke committee which meets regularly
- ☐ Conduct regular case review with this committee
- ☐ Host an ASRH designation site visit
- ☐ Continuously provide feedback to a) all members of acute stroke team; b) transferring hospital staff; c) EMS personnel that stabilized and transported patient to your facility

Additional Program Activities

- ☐ If your hospital is not designated, consider applying for designation
- ☐ Attend Minnesota Stroke Program Webinars and Trainings
- ☐ Follow-up with patients after discharge; collect and submit post-discharge data on patients discharged home to the Minnesota Stroke Registry
- ☐ Conduct stroke community awareness campaigns, projects, and events throughout the year

All program documents are available for download from the program website:
http://www.health.state.mn.us/stroke

MDH Program Webinar Series

4th Wednesday of the Month (3rd Wednesday in December)
12:00 – 12:30 pm CT
Meeting Access Code: 798 551 115
WebEx Meeting Link
Audio: (844) 302-0362 (Toll Free)

2018

Month	Date	Topic
January		Program
February		Transitions
March		Public Awareness
April		Registry
May		Transitions
June	6/27/18	Designation
July	7/25/18	EMS
August	8/22/18	Transitions
September	9/26/18	Program
October	10/24/18	Registry
November	11/28/18	Transitions
December	12/19/18*	Designation

2019

Month	Date	Topic
January	1/23/19	Program
February	2/27/19	Transitions
March	3/27/19	Public Awareness
April	4/24/19	Registry
May	5/22/19	Transitions
June	6/26/19	Designation
July	7/24/19	Program
August	8/28/19	Transitions
September	9/25/19	EMS
October	10/23/19	Registry
November	11/27/19	Transitions
December	12/18/19*	Designation

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Please email health.stroke@state.mn.us with your questions if you are uncertain which staff member to contact.

All program documents are available for download from the program website:
http://www.health.state.mn.us/stroke