

DEVELOPMENT OF AN IN-HOSPITAL STROKE ALERT PROTOCOL

MERCY MEDICAL CENTER, CEDAR RAPIDS, IOWA

Up to 15 percent of all strokes occur while patients are in the hospital – and, often these strokes are more severe. The typical in-hospital stroke (IHS) patient is in the hospital for surgical procedures or cardiac disorders. Nursing and other staff may not immediately recognize stroke symptoms, or these symptoms may be attributed to another cause. Delays may occur in communicating with the primary care physician and eventually the 3-hour time window to give thrombolytic treatment is missed. Simply put, time lost is brain lost...

Mercy Medical Center made a commitment to identify and treat in-hospital stroke by developing an “In-Hospital Stroke Alert.” This protocol empowers nursing staff to initiate the stroke-alert process with one phone call.

As an initial step in achieving this goal, an interdisciplinary group was formed to identify existing barriers to initiate a stroke alert and to discuss how these barriers could be removed. This group was composed of Neurology Medical Director, Stroke Coordinator/ Clinical Outcomes and Research for Neuromedical, Chief Medical Director, Clinical Outcomes and Research Director, Heart/Lung/Vascular Service Line Administrator, Manager of Cardiac Stroke Center, Manager of Intensive Care Center, Emergency Department Medical Director, Manager of the Cath Lab, and Representatives from Pharmacy, Lab, and Radiology. By looking at models for stroke alert in the ED, a protocol for IHS was developed and approved by both Internal Medicine and Neurology Departments. This was taken to the Medical Executive Committee for approval in December 2007.

The key factors for protocol success include:

- Neurology and medical community support of the protocol, based on Evidence-Based Practice.
- Education of nurses to recognize acute stroke and the importance of calling MET team right away. Emphasis that time lost is brain lost.
- Education of MET team nurses in rapid assessment with the National Institute Health Stroke Scale (NIHSS) and empower MET team to seek expert consultation from the neurologist without a request for consultation from primary care physician.
- Education of the ICC staff to administer thrombolytics.
- Use of Stroke Order Sets.
- Ongoing evaluation and feedback to staff.

Mercy Medical Center's In Hospital Stroke Protocol

Stage 1

In hospital patient presents with S/S:

- Sudden confusion, trouble speaking or understanding
- Sudden numbness or weakness of the face, arm, or leg, especially on one side of the body
- Sudden trouble seeing in one or both eyes
- Sudden trouble walking, dizziness, loss of balance or coordination
- Sudden severe headache with no known cause

S/S noted by nursing staff they will:

- call MET Team (rapid response team)
- start O2, 2 liters NC
- start IV, 18 or 20 gauge antecubital
- check blood glucose
- place patient on monitor

Stage 2

MET Team will call a STROKE ALERT and "run the clock" (see explanation below)

- Assess patient with NIHSS and call the neurologist
- Request stroke alert order set which will contain:
 - Head CT order as Stroke Alert
 - CBC, CMP, PT, PTT (check to see if results from previous 12 hours are available) prioritize- head CT and labs come first. EKG is done as time permits.
 - EKG
 - Call attending physician " we have called a stroke alert and have notified the neurologist..."

Stage 3

Neurologist will:

Arrive within 30 minutes after call to see patient.

Decide if CTA is needed and if IV tPA or intra-arterial tPA should be given.

Call Interventional Radiologist if intra-arterial tPA indicated, IR will call in the Cath Lab.

Communicate with attending physician.

Attending Physician will:

Communicate with neurologist concerning care after stroke alert.

Stage 4

Transfer to Intensive Care Center for thrombolytic administration – or -

Transfer to Cath lab for IV and intra-arterial thrombolytic administration –or-

Transfer to Cardiac Stroke Center for acute stroke without thrombolytic administration

“Run the clock” means that from time of symptom onset or discovery

MET to patient: 10 minutes or less

MET team call to neurologist: 15 minutes

CT completion: 25 minutes

CT interpretation: 45 minutes

Neurologist on site: 45 minutes

Treatment with tPA, if indicated: 60 minutes