

STROKE

Stroke is defined as damage to brain tissue resulting from interruption in blood flow. The American Heart Association (AHA) reports 942,000 discharges for stroke in 2002. Stroke accounted for 1 in 15 deaths in the United States that same year. The average length of stay has been markedly decreasing, but is still almost six days. The estimated direct and indirect cost of stroke in 2005 is \$56.8 billion. Stroke care is a rapidly evolving field in which expeditious and careful inpatient care significantly affects outcome. The hospitalist is frequently the primary provider of care for these inpatients. Therefore, it is incumbent on hospitalists to develop the knowledge and skills to identify and manage all types of strokes, coordinate specialty and primary care resources, and guide patients safely and cost-effectively through the acute hospitalization and back into the outpatient setting.

KNOWLEDGE

Hospitalists should be able to:

- Describe the ischemic and hemorrhagic causes of stroke.
- Describe the relationship between the anatomic location of stroke and clinical presentation.
- Employ appropriate imaging and laboratory evaluation to exclude conditions that mimic stroke, guide therapy, and help determine etiology in patients with and without traditional risk factors.
- List risk factors for ischemic and hemorrhagic stroke.
- State indications and contraindications for thrombolytic therapy in the setting of acute stroke.
- Explain indications, contraindications and mechanisms of action of pharmacologic agents used to treat stroke.
- Explain the optimal blood pressure control for individual patients presenting with different types of stroke.
- State indications for early surgical and endovascular interventions.
- Explain the spectrum of functional outcomes of different types of stroke and how these relate to the initial presentation.
- Explain goals for hospital discharge, including specific measures of clinical stability for safe care transition.

SKILLS

Hospitalists should be able to:

- Elicit pertinent details of clinical history and symptoms that are typical of stroke.
- Perform a directed physical examination with emphasis on thorough neurological examination to help guide further evaluation and treatment.
- Diagnose the etiology of stroke through interpretation of initial testing including history, physical examination, electrocardiogram, neurological imaging, and laboratory results.
- Initiate indicated acute therapies to improve the prognosis of stroke.
- Identify patients at risk for acute decompensation, which may include those with signs of increased intracranial pressure and posterior circulation disease, and initiate appropriate therapy.
- Identify patients at risk for aspiration and address nutritional issues.
- Manage the airway when indicated.
- Maintain temperature, blood pressure and glycemic control.
- Assess patients with stroke in a timely manner, and manage or co-manage the patient with the primary requesting service.

ATTITUDES

Hospitalists should be able to:

- Communicate with patients and families to explain the history and prognosis of stroke.
- Communicate with patients and families to explain goals of care plan, discharge instructions and management after release from hospital.
- Communicate with patients and families to explain tests and procedures, and the use and potential side effects of pharmacologic agents.
- Communicate with patients and families to explain the tests and procedures and their indications, and to obtain informed consent.

- Recognize the indications for early specialty consultation, which may include neurology, neurosurgery and interventional radiology.
- Employ prophylaxis against common complications, which may include urinary tract infection, aspiration pneumonia, and venous thromboembolism.
- Initiate secondary stroke prevention.
- Employ an early and multidisciplinary approach to the care of stroke patients that begins at admission and continues through all care transitions.
- Address resuscitation status early during hospital stay; implement end-of-life decisions by patients and/or families when indicated or desired.
- Recognize barriers to follow-up care of stroke patients and involve multidisciplinary hospital staff to accordingly tailor medications and transition of care plans.
- Communicate to outpatient providers the notable events of the hospitalization and post-discharge needs, which may include outpatient cardiac rehabilitation.
- Utilize evidence based recommendations and protocols and risk stratification tools for the treatment of stroke.

SYSTEM ORGANIZATION AND IMPROVEMENT

To improve efficiency and quality within their organizations, Hospitalists should:

- Lead, coordinate or participate in multidisciplinary teams, which may include neurology, rehabilitation medicine, nursing, physical and occupational therapy, speech pathology and other allied health professionals, early in the hospital course to reduce complications, facilitate patient education and discharge planning.
- Lead, coordinate or participate in multidisciplinary efforts to develop protocols to rapidly identify stroke patients with indications for acute interventions and minimize time to intervention.
- Lead, coordinate or participate in multidisciplinary initiatives to promote patient safety and optimize resource utilization, including aggressive treatment of risk factors and rehabilitation.