



<b>Body System: Neurologic</b>		
<b>Session Topic: Stroke</b>		
<b>Educational Format</b>		<b>Faculty Expertise Required</b>
<b>REQUIRED</b>	Interactive Lecture	Expertise in the field of study. Experience teaching in the field of study is desired. Preferred experience with audience response systems (ARS). Utilizing polling questions and engaging the learners in Q&A during the final 15 minutes of the session are required.
<b>OPTIONAL</b>	Problem-Based Learning (PBL)	Expertise teaching highly interactive, small group learning environments. Case-based, with experience developing and teaching case scenarios for simulation labs preferred. Other workshop-oriented designs may be accommodated. A typical PBL room is set for 50-100 participants, with 7-8 each per round table. <u>Please describe your interest and plan for teaching a PBL on your proposal form.</u>
<b>Professional Practice Gap</b>	<b>Learning Objective(s) that will close the gap and meet the need</b>	<b>Outcome Being Measured</b>
<ul style="list-style-type: none"> <li>Women, aged 45-54, are at risk for delayed treatment for stroke.</li> <li>Recent studies suggest that among patients hospitalized for surgery, perioperative atrial fibrillation was associated with an increased long-term risk of ischemic stroke, especially following non-cardiac surgery; therefore, physicians should also consider this population when identifying those at risk for stroke.</li> <li>Aspirin is frequently under prescribed to patients at risk for stroke.</li> <li>Physicians have knowledge gaps with regard to primary and secondary prevention of stroke.</li> <li>Physicians are frequently non-adherent to clinical practice guidelines for stroke evaluation and management.</li> </ul>	<ol style="list-style-type: none"> <li>Assess patients presenting with possible signs of TIA or stroke; ordering appropriate imaging if necessary.</li> <li>Develop collaborative care plans to assist patients in making behavioral modifications to decrease their risk of having a stroke, and recognize the warning signs of a stroke.</li> <li>Propose appropriate treatment options to improve outcomes in patients who suffer a stroke.</li> <li>Counsel patients and their family members on how to cope with the effects of stroke.</li> </ol>	Learners will submit written commitment to change statements on the session evaluation, indicating how they plan to implement presented practice recommendations.
<b>ACGME Core Competencies Addressed (select all that apply)</b>		
X	Medical Knowledge	Patient Care



X	Interpersonal and Communication Skills	Practice-Based Learning and Improvement
	Professionalism	Systems-Based Practice

**Faculty Instructional Goals**

Faculty play a vital role in assisting the AAFP to achieve its mission by providing high-quality, innovative education for physicians, residents and medical students that will encompass the art, science, evidence and socio-economics of family medicine and to support the pursuit of lifelong learning. By achieving the instructional goals provided, faculty will facilitate the application of new knowledge and skills gained by learners to practice, so that they may optimize care provided to their patients.

- Provide up to 3 evidence-based recommended practice changes that can be immediately implemented, at the conclusion of the session; including SORT taxonomy & reference citations
- Facilitate learner engagement during the session
- Address related practice barriers to foster optimal patient management
- Provide recommended journal resources and tools, during the session, from the American Family Physician (AFP), Family Practice Management (FPM), and Familydoctor.org patient resources; those listed in the References section below are a good place to start
  - Visit <http://www.aafp.org/journals> for additional resources
  - Visit <http://familydoctor.org> for patient education and resources
- Provide specific examples illustrating the application of evidence-based guidelines for the management of stroke
- Provide learners with specific strategies to utilize the AMA PCPI Stroke Rehabilitation Performance Measurement Set to identify and define quality measures toward improving outcomes for patients with stroke, transient ischemic attack (TIA) and patients undergoing stroke rehabilitation.
- Provide recommendations to assess patients with underlying risk factors for stroke; particularly those who are at increased risk.
- Provide strategies and resources for counseling patients on the warning signs of a stroke.
- Provide strategies and resources for developing collaborative care plans to assist patients in making behavioral modifications (such as smoking, lowering high blood pressure) to decrease their risk of having a stroke.
- Provide recommendation for appropriate treatment options to improve outcomes in patients who suffer a stroke, including a review of new therapeutic options.
- Provide recommendations regarding guidelines for Medicare reimbursement.
- Provide recommendations to maximize office efficiency and guideline adherence to the prevention, diagnosis and management of stroke.
- Provide an overview of newly available treatments, including efficacy, safety, contraindications, and cost/benefit relative to existing treatments.

**Needs Assessment**

Stroke is a leading cause of death in the U.S., and is a leading cause of serious, long-term disability. Of all strokes, 87% are ischemic, 10% are intracerebral hemorrhage and 3% are subarachnoid hemorrhage. More than 6.5 million people have been affected by some form of a



stroke – either first-time or recurring – and blacks have almost twice the risk of first-time strokes than whites.<sup>1</sup>

Data from a recent American Academy of Family Physicians (AAFP) CME Needs Assessment survey indicate that family physicians have knowledge gaps related to primary and secondary stroke prevention, appropriate use of imaging modalities, and overall management of patients who have suffered a stroke.<sup>2</sup> More specifically, CME outcomes data from 2013-2015 AAFP FMX (formerly Assembly): *Stroke* sessions suggest that physicians have knowledge and practice gaps with regard to primary and secondary prevention of stroke; risk assessment; being up to date on pharmacologic treatment options; appropriate use of diagnostic evaluations; educating patients on lifestyle modification for reducing the risk of CVA/TIA/stroke; and general adherence to clinical guidelines.<sup>3-5</sup>

Women aged 45 to 54 years have a higher prevalence of stroke than same-age men; however, women are three times more at risk for a delay getting timely hospitalization, and are more likely than men to die from stroke.<sup>6,7</sup> Women have less typical symptom patterns of stroke than men, which may contribute to women's delay in seeking care.<sup>8</sup> Additionally, recent studies suggest that among patients hospitalized for surgery, perioperative atrial fibrillation was associated with an increased long-term risk of ischemic stroke, especially following non-cardiac surgery; therefore, physicians should also consider this population when identifying those at risk for stroke.<sup>9</sup>

Both the AAFP and the US Preventive Services Task Force (USPSTF) *recommend* the use of aspirin for women age 55 to 79 years when the potential benefit of a reduction in ischemic strokes outweighs the potential harm of an increase in gastrointestinal hemorrhage; and, *recommend against* the use of aspirin for stroke prevention in women younger than 55 years and for myocardial infarction prevention in men younger than 45 years.<sup>10</sup> However, studies show that clinicians frequently do not recommend aspirin to patients at risk for stroke, particularly women aged 55-79.<sup>11</sup>

Risk factors for stroke fall into 2 categories, controllable (e.g. high blood pressure, atrial fibrillation, high cholesterol, diabetes, atherosclerosis, circulation problems, tobacco use and smoking, alcohol use, physical inactivity, obesity), and uncontrollable (e.g. age, gender, race, family history, previous stroke or TIA, fibromuscular dysplasia, patent foramen ovale).<sup>12</sup>

Family physicians should be prepared to diagnose and evaluate transient ischemic attack (TIA), a common risk factor for stroke, as it is often underreported.<sup>13</sup> Physicians are often challenged to distinguish between true TIA and ischemic events from TIA mimics. Physicians should receive education and training to expedite a correct and early diagnosis to foster early intervention and reduce the risk of recurrent ischemic events.<sup>13</sup> Family physicians report knowledge and competence gaps related to the use of imaging modalities for the diagnosis of cerebrovascular diseases, and should therefore receive continuing education in the use of current AAN guidelines on magnetic resonance imaging for diagnosing acute ischemic stroke.<sup>14</sup> Family physicians should also be adept at subacute management of ischemic stroke, as less than 5% of patients qualify for acute therapies for ischemic stroke because they do not present early enough.<sup>15</sup>



The goal of post-TIA attack interventions is to prevent future episodes or stroke. Family physicians should be aware of current American Heart Association (AHA) and American Stroke Association (ASA) guidelines on preventing recurrent stroke in patients who have had a previous stroke or TIA, as well as the Guidelines for the Early Management of Patients With Acute Ischemic Stroke.<sup>16,17</sup> It is essential that physicians be knowledgeable about both pharmacologic therapies, risk assessment for bleeding from anticoagulation therapy (e.g. OBR1), and strategies to counsel patients on lifestyle modifications (e.g. shared decision making).<sup>18-22</sup> Physicians should also be kept up to date since the publication of the 2013 AHA/ASA Guidelines for the Early Management of Patients With Acute Ischemic Stroke, as there is substantial new high-quality evidence on the clinical efficacy of endovascular treatments of acute ischemic stroke has become available.<sup>23</sup> Among the recommendations included are several endovascular interventions, imaging, and systems of stroke care.

Physicians may improve their care of patients with stroke and stroke prevention by engaging in continuing medical education that provides practical integration of current evidence-based guidelines and recommendations into their standards of care, including, but not limited to the following:<sup>24-26</sup>

- Prophylactic carotid endarterectomy for stroke prevention can be performed in highly selected patients with asymptomatic carotid artery stenosis, and in patients with a history of transient ischemic attack or stroke when perioperative risk is low.
- Aspirin therapy is reasonable in women with diabetes or in those 65 years and older if their blood pressure is controlled and the benefit for ischemic stroke and myocardial infarction prevention is likely to outweigh the risks.
- Women with chronic primary or secondary hypertension, or hypertension in a previous pregnancy should take low-dose aspirin from 12 weeks of gestation until delivery.
- Blood pressure therapy should be initiated or resumed in patients with blood pressure greater than 140 mm Hg systolic, or greater than 90 mm Hg diastolic within the first few days following a stroke or TIA.
- Statin therapy is recommended in patients with ischemic stroke or TIA who have a low-density lipoprotein cholesterol level of 100 mg per dL or greater with or without evidence of other arteriosclerotic cardiovascular disease, and a low-density lipoprotein cholesterol level of less than 100 mg per dL even with no evidence of other arteriosclerotic cardiovascular disease.
- Starting aspirin and clopidogrel might be considered within 24 hours of a stroke or TIA and continued for 90 days.
- Obesity screening, increased physical activity, reduced sodium intake, and a Mediterranean diet are reasonable for patients willing to participate.
- All patients with stroke symptoms should undergo urgent neuroimaging with CT or MRI.
- Patients presenting with acute vestibular syndrome or suspected posterior infarction should undergo acute diffusion-weighted MRI. A negative MRI result should be followed by repeat MRI in three to seven days or bedside oculomotor testing to exclude a false-negative result.
- Lumbar puncture should be performed in persons with suspected subarachnoid hemorrhage and a normal noncontrast head CT result.
- Patients and family members should be educated about stroke symptoms and the need for urgent evaluation.



These recommendations are provided only as assistance for physicians making clinical decisions regarding the care of their patients. As such, they cannot substitute for the individual judgment brought to each clinical situation by the patient's family physician. As with all clinical reference resources, they reflect the best understanding of the science of medicine at the time of publication, but they should be used with the clear understanding that continued research may result in new knowledge and recommendations. These recommendations are only one element in the complex process of improving the health of America. To be effective, the recommendations must be implemented. As such, physicians require continuing medical education to assist them with making decisions about specific clinical considerations.

The American Medical Association, in collaboration with the American Academy of Neurology (AAN), the American College of Radiology (ACR), and the National Committee for Quality Assurance (NCQA) has released a Stroke and Stroke Rehabilitation Performance Measurement Set to identify and define quality measures toward improving outcomes for patients with stroke, transient ischemic attack (TIA) and patients undergoing stroke rehabilitation.<sup>27</sup>

Practice gaps identified by the workgroup are summarized as:

- Neurological symptoms consistent with a TIA are often underreported to the healthcare provider by the patient
- Underuse of effective services (evaluation and treatment)
- Addressing patient safety
- Addressing patient-centered care
- Addressing avoidable harmful events

Desired stroke and stroke rehabilitation patient outcomes include:

- Reduce delays in stroke treatments
- Decrease symptom severity
- Decrease incidence of recurrent stroke
- Decrease preventable harmful events of stroke and stroke treatment
- Increase stroke survival rates
- Attain highest level of function after stroke
- Promote patient centered decision making

Recommended evidence-based clinical practice guidelines for the management of stroke and stroke rehabilitation include guidelines from:

- American Academy of Neurology
- American Stroke Association
- American Association of Neuroscience Nurses
- American College of Chest Physicians
- American College of Cardiology
- American Geriatrics Society
- National Heart Lung and Blood Institute



The AMA PCPI Stroke and Stroke Rehabilitation Performance Measurement Set, based on these guidelines, established recommended measures to be used for quality improvement and accountability. Family physicians require education and training on the use of these measures to improve outcomes for patients with stroke, transient ischemic attack (TIA) and patients undergoing stroke rehabilitation.

Family physicians may need to assist patients and caregivers with difficult choices regarding care, home health and lifestyle changes after a stroke. Organizations, such as the American Heart Association, have resources to help educate patients and caregivers after a stroke.

Resources: Evidence-Based Practice Recommendations/Guidelines/Performance Measures

- AHA and ASA Release Guideline for Prevention of Future Stroke in Patients with Stroke or TIA<sup>25</sup>
- 2015 American Heart Association/American Stroke Association Focused Update of the 2013 Guidelines for the Early Management of Patients With Acute Ischemic Stroke Regarding Endovascular Treatment: A Guideline for Healthcare Professionals From the American Heart Association/American Stroke Association<sup>23</sup>
- AHA/ASA Release Guideline on Stroke Prevention in Women<sup>24</sup>
- Diagnosis of acute stroke<sup>26</sup>
- Transient ischemic attack: Part I. Diagnosis and evaluation<sup>13</sup>
- Transient ischemic attack: Part II. Risk factor modification and treatment<sup>20</sup>
- Subacute management of ischemic stroke<sup>15</sup>
- AHA/ASA Guidelines on Prevention of Recurrent Stroke<sup>17</sup>
- AHA/ASA Guidelines for the early management of patients with acute ischemic stroke<sup>16</sup>
- (1) Guidelines for prevention of stroke in patients with ischemic stroke or transient ischemic attack. (2) Update to the AHA/ASA recommendations for the prevention of stroke in patients with stroke and transient ischemic attack<sup>28</sup>
- Evidence-based guideline: the role of diffusion and perfusion MRI for the diagnosis of acute ischemic stroke<sup>14</sup>
- Predicting the risk of bleeding in patients taking warfarin<sup>21</sup>
- Adding health education specialists to your practice<sup>29</sup>
- Engaging Patients in Collaborative Care Plans<sup>30</sup>
- Health Coaching: Teaching Patients to Fish<sup>31</sup>
- Medication adherence: we didn't ask and they didn't tell<sup>32</sup>
- Encouraging patients to change unhealthy behaviors with motivational interviewing<sup>33</sup>
- FamilyDoctor.org. Stroke | Overview (patient resource)<sup>34</sup>

References

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