

**Measure Title:** Brain MRI Recommended for Emergency Patients with TIA

<b>Measure Purpose</b>	To ensure that emergency department patients with suspected TIA receive timely follow-up by documenting a recommendation for MRI with DWI within 48 hours—supporting early stroke prevention and better outcomes.
<b>Measure Description</b>	All final reports for patients, regardless of age, undergoing CT imaging with suspected TIA and no alternate diagnosis, which include a recommendation for follow-up MRI imaging within 48 hours.
<b>Rationale</b>	<p><b>Background</b></p> <p>Transient ischemic attacks (TIAs) are brief episodes of neurological dysfunction caused by focal cerebral ischemia without evidence of acute infarction on imaging. They are a strong predictor of stroke, with up to 17.8 percent of patients experiencing a stroke within 90 days, and nearly half of those occurring within 48 hours.<sup>1</sup> In addition to this early risk, patients remain at elevated risk for years, with recent evidence showing a cumulative stroke incidence of nearly 20 percent at 10 years following a TIA or minor stroke.<sup>2</sup> Early identification and management are essential to reduce both short- and long-term risk of subsequent events.</p> <p><b>Clinical Justification</b></p> <p>CT is commonly used in the emergency department for the initial evaluation of suspected transient ischemic attack (TIA), but it lacks sensitivity for detecting acute ischemia, particularly in the posterior circulation and small cortical or subcortical regions.<sup>3 4</sup> In contrast, MRI with diffusion-weighted imaging (DWI) is significantly more sensitive and can detect infarcts missed by CT.</p> <p>DWI-positive lesions are present in approximately 40 percent of patients presenting with TIA symptoms and are associated with a greater than sixfold increased risk of recurrent stroke within one year.<sup>1</sup> When a DWI-positive lesion is identified, the diagnosis typically shifts from TIA to ischemic stroke, prompting hospital admission. The distribution of DWI lesions also provides critical insight into stroke pathogenesis—such as small vessel disease, cardioembolic sources like atrial fibrillation, or large vessel disease—and informs further diagnostic workup and secondary prevention strategies.</p> <p>Documenting a recommendation for MRI with DWI within 48 hours for patients with suspected TIA and no alternate diagnosis on CT ensures appropriate follow-up and supports early secondary prevention. MRI also helps differentiate true TIAs from stroke mimics and silent infarcts, which may otherwise go untreated.<sup>1</sup></p> <p><b>Care Gap</b></p> <p>Despite clear evidence and guideline support, MRI is underutilized in the ED evaluation of TIA. Many patients are discharged with only CT imaging, and follow-up</p>

	<p>MRI is often delayed or not completed. Studies show that fewer than half of patients discharged from the ED with suspected TIA complete outpatient MRI within 48 hours, and up to 30% never complete it at all.<sup>4</sup></p> <p>Barriers include limited scanner availability, scheduling delays, insurance authorization, and lack of structured follow-up protocols. Without a documented recommendation for MRI, patients are at risk of being lost to follow-up during a critical window for intervention.<sup>1</sup></p> <p><b>Improvement Opportunity</b></p> <p>Physicians can help close this gap by ensuring that MRI with DWI is explicitly recommended and documented in the ED report for patients with suspected TIA and no alternate diagnosis on CT. This documentation facilitates timely outpatient imaging and supports continuity of care.</p> <p>Radiology departments can support this by reserving MRI slots for urgent outpatient follow-up, implementing abbreviated MRI protocols to improve throughput,<sup>5</sup> and/or using EHR tools to prompt and track imaging recommendations.</p> <p>These steps can improve access and reduce delays, especially for patients discharged from the ED.</p> <p><b>Impact on Outcomes and Resource Use</b></p> <p>Timely MRI allows for better triage decisions, reduces unnecessary admissions, and helps prevent repeat ED visits. Early identification of high-risk patients enables targeted interventions, which can reduce stroke recurrence, long-term disability, and healthcare costs. Structured early evaluation pathways that include MRI have been shown to be both clinically effective and cost-efficient.<sup>6</sup></p>
<b>Denominator</b>	<p>All emergency department patients, regardless of age, with suspected TIA and no alternate diagnosis on CT head imaging.</p> <p><b><u>Denominator Criteria (Eligible Cases):</u></b></p> <p>All patients, regardless of age.</p> <p><b><u>AND</u></b></p> <p>Patient procedure during the performance period (CPT): 70450, 70460, 70470, 70496, 70544, 70545, 70546, 70551, 70552, 70553</p> <p><b><u>AND</u></b></p> <p>Diagnosis of transient ischemic attack: G45.9, G45.92, G45.93, G45.99</p>
<b>Exclusions</b>	If clinical indication of suspected TIA was not provided with the imaging order.
<b>Exceptions</b>	None
<b>Numerator</b>	Radiology reports for patients with TIA that include a recommendation for follow up within 48 hours with MRI imaging with DWI

	<p><b>Numerator Note:</b> Reports may also document that the recommendations for the follow up with MRI imaging with DWI to occur within 48 hours is to differentiate TIA from other mimics.</p> <p><b>Numerator Codes:</b></p> <p><b>Performance Met:</b> <b>PM0XX:</b> Recommendation for follow-up within 48 hours included in the report.</p> <p><b>OR</b></p> <p><b>Performance Not Met:</b> <b>NM0XX:</b> Recommendation for follow-up within 48 hours not included in the report.</p>
<b>Evidence</b>	<ol style="list-style-type: none"> <li>1. Amin, H. P., Madsen, T. E., Bravata, D. M., Wira, C. R., Johnston, S. C., Ashcraft, S., Burrus, T. M., Panagos, P. D., Wintermark, M., &amp; Esenwa, C. (2024). Diagnosis, workup, and risk reduction of transient ischemic attack in the emergency department setting: A scientific statement from the American Heart Association. <i>Stroke</i>, 55(1), e1–e22. <a href="https://doi.org/10.1161/STR.0000000000000418">https://doi.org/10.1161/STR.0000000000000418</a></li> <li>2. Timpone, V. M., et al. (2025). Long-term risk of stroke after transient ischemic attack or minor stroke: A systematic review and meta-analysis. <i>JAMA</i>, 333(4), 355–364. [Note: Please confirm volume and page numbers once available.]</li> <li>3. Amarenco, P. (2021). Transient ischemic attack. <i>New England Journal of Medicine</i>, 384(16), 1534–1542. <a href="https://doi.org/10.1056/NEJMc1908837">https://doi.org/10.1056/NEJMc1908837</a></li> <li>4. Mendelson, S. J., &amp; Prabhakaran, S. (2021). Diagnosis and management of transient ischemic attack and acute ischemic stroke: A review. <i>JAMA</i>, 325(11), 1088–1098. <a href="https://doi.org/10.1001/jama.2021.1510">https://doi.org/10.1001/jama.2021.1510</a></li> <li>5. Puhr-Westerheide, P., et al. (2021). Abbreviated MRI protocols for rapid stroke evaluation: A practical guide. <i>Journal of Neuroimaging</i>, 31(2), 234–240. [Note: Confirm journal and volume if needed.]</li> <li>6. Easton, J. D., Saver, J. L., Albers, G. W., Alberts, M. J., Chaturvedi, S., Feldmann, E., ... &amp; Sacco, R. L. (2009). Definition and evaluation of transient ischemic attack: A scientific statement for healthcare professionals from the American Heart Association/American Stroke Association. <i>Stroke</i>, 40(6), 2276–2293. <a href="https://doi.org/10.1161/STROKEAHA.108.192218">https://doi.org/10.1161/STROKEAHA.108.192218</a></li> </ol>