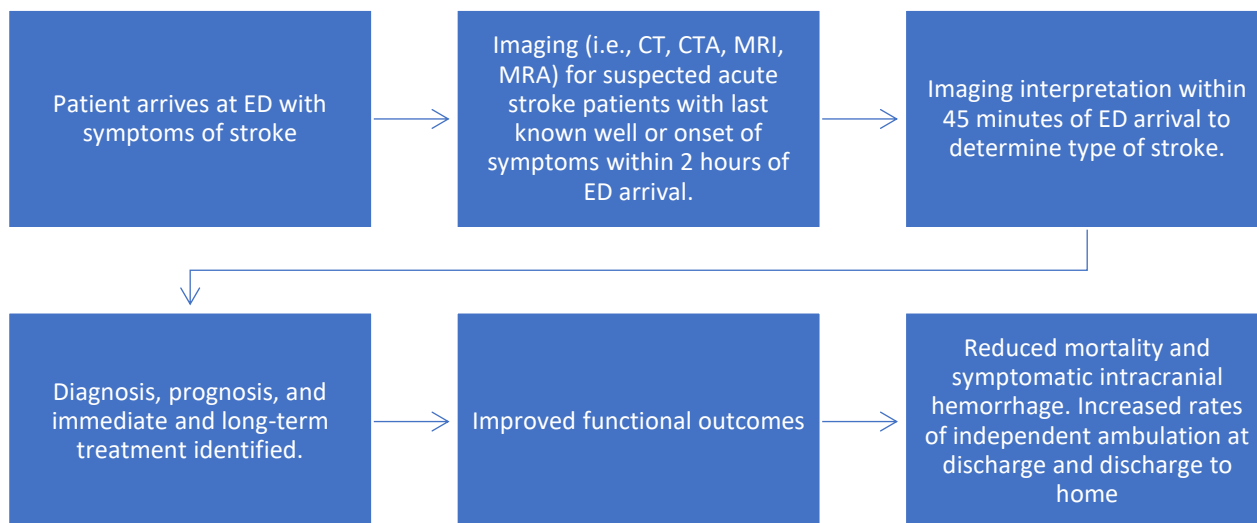


Head CT or MRI Scan Results for Acute Ischemic Stroke or Hemorrhagic Stroke Patients who Received Head CT or MRI Scan Interpretation within 45 minutes of ED Arrival

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Figure 1. Logic Model



Stroke is a leading cause of mortality and long-term disability (Tsao et al., 2023). Time is of the essence when diagnosing and treating an acute ischemic stroke. MRI can detect an ischemic stroke within a few hours of its onset. A CT scan without contrast is a fast and reliable method for detecting cerebral hemorrhage. Brain imaging is the primary tool for diagnosing an ischemic stroke and aids in differentiating between subacute and chronic lesions of the brain which is essential for the selection of patients for thrombolysis or thrombectomy. Non-contrast CT has been the standard in emergency stroke treatment, primarily to exclude hemorrhagic stroke, which cannot be treated with clot-busting therapies. According to Reznick, et al., 2017, national guidelines call for door-to-imaging time (DIT) within 25 minutes for suspected acute stroke patients and intravenous administration of recombinant tissue-type plasminogen activator within 60 minutes of patient arrival to the emergency department (ED) and timely endovascular treatment when appropriate.

Ischemic Stroke Imaging Process Steps:

1. Imaging (i.e., CT, CTA, MRI, MRA) for suspected acute stroke patients with last known well or onset of symptoms within 2 hours of ED arrival.
2. Imaging interpretation within 45 minutes of ED arrival to determine type of stroke.

References:

Reznick, M., Murray, E., Youngren, M., Durham, N., Michael, S. 2017. Door-to-Imaging Time for Acute Stroke Patients Is Adversely Affected by Emergency Department Crowding. <https://doi.org/10.1161/STROKEAHA.116.015131>

Tsao CW, Aday AW, Almarzooq ZI, Beaton AZ, Bittencourt MS, Boehme AK, et al. Heart Disease and Stroke Statistics—2023 Update: A Report From the American Heart Association. *Circulation*. 2023;147:e93–e621.