

XI. APPENDIX C: STROKE DESIGNATION REQUIREMENTS

Level I Stroke Center (Comprehensive)

Designation Criteria for Level I Stroke Center

1. Personnel

1.1 The center has a Stroke Program Coordinator that is at minimum an RN.

1.2 The center has a Stroke Program Medical Director who is a Neuro-Specialist (i.e. Neurosurgeon, Neurologist, or Neuro-Intensivist) with extensive experience in Neurology and cerebrovascular disease.

1.3 The center has an acute stroke team on-site (as designated by the Stroke Program leadership) 24/7 within 15 minutes of activation with an 80% achievement rate.

1.4 The Stroke Program Coordinator and Stroke Program Medical Director are responsible for program design, education, protocols, Performance Improvement (PI), program development, outreach, etc.

1.5 The center has a Neurologist 24/7 that is contracted to be on-site or available via telemedicine within 15 minutes of stroke team activation.

1.6 The center has a board-certified Vascular Neurologist; or the center has an ABPN-certified Neurologist who has completed 12 months of formal training in Vascular Neurology, or who devotes a minimum of 25% of practice time to Vascular Neurology.

1.7 The center has a Vascular Surgeon available 24/7 that is contracted to be on-site within 30 minutes when requested.

1.8 The center has Neuro-Interventional physicians available 24/7 that are contracted to be on-site within 30 minutes when requested.

1.9 The center has Critical Care or Neurocritical Care physicians, or advanced practice providers, available 24/7 that are contracted to be on-site within 30 minutes when requested.

1.10 The center has Physical Medicine and Rehabilitation physicians.

1.11 The center has a Neurosurgeon available 24/7 that is contracted to be on-site within 30 minutes when requested.

1.12 The center has organizational and administrative support.

1.13 The center has clinical Emergency Department (ED) personnel trained in diagnosing and treating acute stroke on-site 24/7.

2. Training and Education

2.1 The Stroke Program Medical Director has a minimum of 8 hours of annual stroke-related education.

2.2 The Stroke Program Coordinator has a minimum of 8 hours of annual education on stroke diagnosis and treatment.

2.3 All center staff are educated annually on the signs and symptoms of stroke and the process to activate emergency systems.
2.4 The Emergency Department (ED) and Stroke Unit's clinical staff demonstrate evidence of initial and annual training in the care of acute stroke patients.
2.5 The center provides annual public education on stroke-related topics such as disease prevention, risk factors, signs and symptoms, and 911 activation.
2.6 The center provides stroke education to stroke patients and their caregivers.
2.7 The center offers disease prevention for its employees at least annually.
3. Stroke Services
3.1 The center has Neuro-Radiology services available 24/7.
3.2 The center has Diagnostic Radiology services available 24/7.
3.3 The center has:
a. an Intensive Care Unit (ICU);
b. Physical Therapy;
c. Occupational Therapy; and
d. Speech Therapy.
3.4 The center has staff stroke nurses available 24/7.
3.5 The center has a CT tech on-site 24/7.
3.6 The center initiates CT or MRI within 20 minutes of patient arrival 24/7 with an 80% achievement rate.
3.7 The center has staff on-site or via telemedicine to interpret CT or MRI results within 45 minutes of patient arrival 24/7 with an 80% achievement rate.
3.8 The center has a diffusion-weighted MRI available 24/7.
3.9 The center has MR angiography/MR venography available 24/7.
3.10 The center has CT angiography available 24/7.
3.11 The center has digital subtraction cerebral angiography available 24/7.
3.12 The center has transcranial doppler available 24/7.
3.13 The center has transesophageal and transthoracic echo.
3.14 The center has carotid artery duplex ultrasound imaging.
3.15 The center has 12-lead ECG and chest x-ray capability 24/7.
3.16 The center has laboratory or point-of-care testing 24/7 with:
a. blood glucose results that are obtained and documented prior to initiation of thrombolytics;
b. results for CBC and coagulation labs are available in a median of 45 minutes or less from patient arrival; and
c. testing results do not delay initiation of thrombolytics.

3.17 The center has IV thrombolytic therapy, as endorse by current evidence-based guidelines, for stroke available 24/7.
3.18 The center reviews mechanical thrombectomy metrics, it will collect data on the following items:
a. arrival at Interventional hospital to skin puncture;
b. symptomatic intracranial hemorrhage within 36 hours of the procedure;
c. mortality within 72 hours of the procedure (all cause);
d. door-to-device;
e. ischemic stroke patients with large vessel occlusion (LVO) who achieve TIC1 2b or higher for the primary vessel occlusion less than or equal to 60 minutes from the time of skin puncture;
f. a process for internal and external benchmarking to drive PI; and
g. tracks 90-day modified Rankin scores for patients receiving mechanical thrombectomy and thrombolytics.
3.19 The center has Intra-Arterial (IA) recanalization capability available 24/7.
3.20 The center performs carotid endarterectomy 24/7.
3.21 The center provides surgical treatment of intracranial cerebrovascular disease 24/7.
3.22 The center provides placement of intracranial pressure transducer 24/7.
3.23 The center provides placement of ventriculostomy 24/7.
3.24 The center performs endovascular treatment of intracranial aneurysms/arterial venous malformations 24/7.
3.25 The center performs endovascular treatment of vasospasm 24/7.
3.26 The center performs stenting and/or angioplasty of extracranial vessels 24/7 or has a referral protocol in place.
3.27 The center performs stenting and/or angioplasty of intracranial vessels 24/7 or has a referral protocol in place.
3.28 The center has operating room coverage 24/7 and is ready within 30 minutes of notification with an 80% achievement rate.
3.29 The center has Interventional services available 24/7 on-site within 30 minutes of notification with an 80% achievement rate.
3.30 The center has post discharge stroke services.
3.31 The center must have written stroke protocols, order sets, procedures, and/or algorithms for assessment and treatment of ischemic and hemorrhagic strokes which include:
a. stroke team activation process;
b. initial diagnostic tests;
c. administration of medication;
d. swallowing assessment prior to oral intake;

e. evaluation and treatment by Physical Therapy, Occupational Therapy, and/or Speech Therapy. Consider as a required reporting to state registry;
f. discharge order set, protocol, or process that includes consideration for antithrombotic therapy, statin therapy, or anticoagulants as needed for patients with atrial fibrillation (AFib) and toward patient education on secondary prevention and risk factors; and
g. referral to post discharge rehabilitation services if need identified.
3.32 The center's pharmacy is adequately staffed by qualified personnel to ensure effective medication management services including emergency services available 24/7.
3.33 The center has transfer protocols or guidelines specific to stroke patients; however, there should be no reason to transfer stroke patients from a Level I Stroke Center other than in extreme circumstances.
3.34 The center provides assistance with training and clinical education for Emergency Medical Services (EMS) agencies in coordination with the EMS Medical Directors, as needed and upon request.
3.35 The center collaborates with EMS agencies on stroke care.
3.36 The center has a process for initiation of palliative care and/or comfort care.
4. Minimum Requirements
4.1 The center cares for a minimum of 12 non-traumatic subarachnoid hemorrhage (SAH) patients per year.
4.2 The center performs a minimum of 15 clippings or endovascular procedures per year for aneurysmal disease.
4.3 The stroke program has an organized process, or a designated response team, for rapid evaluation and treatment of inpatients that develop stroke symptoms.
4.4 NIH Stroke Score is used in the Emergency Department (ED) and the inpatient setting as the primary neurologic assessment tool.
5. Performance Measurement and Quality Improvement
5.1 The center participates in the Idaho TSE Registry. At least 80% of cases are submitted within 180 days of hospital discharge.
5.2 The center meets the benchmark of door-to-needle time of less than 60 minutes with a 75% achievement rate and 45 minutes with a 50% achievement rate.
5.3 The center participates in their Regional TSE Committee.
5.4 The center must have a Performance Improvement (PI) program to ensure optimal care and continuous improvement of care.
5.5 The PI program is supported by a reliable method of internal data collection that consistently gathers valid and objective information necessary to analyze and identify opportunities for improvement.
5.6 System and process issues, clinical care issues, and all admission and transfer decisions must be reviewed by the PI program.

5.7 The center must use current clinical practice guidelines derived from evidence-based validation resources to achieve benchmark goals.
5.8 All process and outcome measures must be documented in a written PI plan.
5.9 The process of analysis occurs at regular intervals (at least quarterly) to meet the needs of the program.
5.10 The process demonstrates problem resolution (loop closure).
5.11 The center is able to identify the stroke patient population for review.
5.12 The center's PI program must work with transferring facilities to provide and obtain feedback on all transferred patients.
5.13 The PI program evaluates delays in availability of the Interventional suite.
5.14 Delays in Surgeon/Interventionalist response time must be monitored and reviewed for cause of delay and opportunities for improvement. Corrective actions must be documented.
5.15 Transfers within 24 hours to a higher level of care must be reviewed to determine the rationale for transfer, adverse outcomes, and opportunities for improvement.
5.16 The PI review is inclusive of all stroke admissions and transfers.
5.17 The center must have a policy to notify dispatch and EMS agencies when on divert status.