

INTEGRATED STROKE CENTER CERTIFICATION PROGRAM REQUIREMENTS

VERSION 25-0



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HOW TO USE THIS MANUAL

This is a new DNV consolidated stroke manual that now contains all four previous stroke level manuals. There has been a real effort to make sure that everyone would be able to find the applicable standards that are required for each level of stroke center certification. You will find that there is a new chapter entitled [DIRECTORY OF APPLICABLE PROGRAM CERTIFICATION STANDARDS](#). There, you will find grids with every standard in every chapter listed for each level of certification. If you press Ctrl and click the title of each grid in this section, it will take you to the actual chapter with the list of standards for that chapter as well as the standards themselves. (To return to your previous location, press Alt/left arrow.)

There is also a legend underneath the titles on each grid that will give you some information about each chapter and standards expectations. Here are two examples of what might be seen.

[Program Management Requirement Grid](#)

All standards required for all levels of Stroke Programs (ASR, PSC, PSC+, CSC)

[Quality Management Requirement Grid](#)

Required Standards depend not only on certification level, but also on scope of service

While the information on the Program Management grid states that all levels of stroke programs need to meet all the requirements in that chapter, in contrast, the Quality Management grid legend states that while the level sections need to be adhered to, it might also depend on the level of services that are being provided by the center.

Changes made to the version 25.0 Integrated Stroke Center Certification Program Requirements are printed in [blue](#).

If standards vary, based on the level of stroke certification, they are identified with a [blue box](#) on the left side of the page.

CSC – PC.2 CR.1

Interpretive Guidelines (IG) have been added to clarify standards (previous notes replaced by IG). The Interpretive Guidelines were developed based on questions from all of you over the last couple of years.

Note “Score At” instructions – A measurement standard *may* be referred to in two different sections. When that occurs, there is a note directing the facility to which of the two standards the measurement should be scored.

EFFECTIVE DATE

DNV Stroke Center Certification Program Requirements

Version 25-0.

Effective Date: August 1, 2025

Please Note: All new requirements and changes are marked in blue.

FEDERAL LAWS, RULES AND REGULATIONS

The DNV Stroke Center Certification requirements are based in whole or in part on the most current recommendations from the Brain Attack Coalition (BAC), American Heart Association and the American Stroke Association (AHA/ASA) and the Center for Medicare and Medicaid (CMS) Conditions of Participation.

The most current version of Federal law and the Code of Federal Regulations referenced in this Certification Program document are incorporated herein by reference and constitute, in part, the DNV Stroke Center Certification requirements.

Stroke Centers through their association with hospitals participating in the Medicare and Medicaid program are expected to comply with current CMS Conditions of Participation. When new or revised requirements are published, stroke centers are expected to demonstrate compliance in a time frame consistent with the effective date as published by CMS in the Federal Register and/or as required by DNV Healthcare USA Inc.

For hospitals, outside of the United States, the CMS requirement is not applied. If the country where the hospital is located has relevant rules, regulations or laws that affect the qualifications or requirements, those laws will be incorporated and adhered to.

The American Heart Association/American Stroke Association will, on occasion, review the Guidelines for stroke care and publish an update to the recommendations for clinicians. DNV Stroke standards are reviewed and revised on a continual basis and when a new recommendation or correction has been made. It should be noted however, if new recommendations are not entered into this document, the certified stroke programs are expected to follow new recommendations within published guidelines from the AHA/ASA, much like that as required by CMS.

INTRODUCTION

The DNV Stroke Center Certification Program is offered by DNV Healthcare USA Inc. (DNV) and integrates requirements related to the CMS Conditions of Participation for Hospitals (CoPs), the Guidelines of the Brain Attack Coalition and Recommendations of the American Heart Association, the American Stroke Association.

A certified stroke center has the personnel, infrastructure, and expertise to diagnose, treat and support stroke patients who require specialized tests, medical care, surgical care or interventional therapies, depending on the scope of service described and offered at each individual certified center. The types of patients who might use and benefit from a certified stroke center include, but are not limited to patients with ischemic strokes, large vessel occlusions, hemorrhagic strokes, or strokes from unusual etiologies. Patients may require specialized testing or interventional therapies such as clipping, coiling, thrombectomies, as well as other endovascular, and/or surgical procedures.

Certified centers are designed to be a part of a larger stroke system of care which includes all levels of stroke care. The individual certification will mean that a hospital is equipped to evaluate, stabilize and to provide emergency care to all patients with acute stroke symptoms and admit the patient to a dedicated stroke unit or unit designated stroke beds or transfer them to a higher level of care or capability to provide the patients depending on their assessed needs.

Certified centers are designed to provide a certain level of care and intervention depending on their capabilities. Each level of certification describes what the requirements and expectations are for each level. The four different levels are as follows:

Acute Stroke Ready (ASR)

The ASR certification signifies that a hospital is equipped to evaluate, stabilize and to provide emergency care to patients with acute stroke symptoms. After evaluation, stabilization and appropriate emergency care, the decision will be made to either admit the patient to their own facility or facilitate transfer to a higher level of care. The intent of the ASR stroke program is to be fully capable of providing initial diagnostic services, stabilization, emergent care and therapies to patients with an acute stroke who present to the emergency department. An ASR certified hospital has the infrastructure and capability to care for acute stroke patients, including administration of intravenous thrombolytic therapy. An ASR certified hospital stroke program by design, usually has fewer overall capabilities than a Primary, Primary Plus or Comprehensive Stroke Center, but has trained staff and resources able to diagnose, stabilize and treat patients with stroke. Stroke patients may be transferred to a Primary, Primary Plus or Comprehensive Stroke Center that would provide a higher level of care as indicated after initial assessment, treatment and stabilization.

Some ASR certified hospitals may have the capability to perform some selected invasive treatments or procedures. If an ASR certified hospital does perform any endovascular procedures within its ASR program, DNV will include the review of these procedures during the survey process. These can range from surgical procedures to interventional procedures, including but not limited to clippings, coiling's, thrombectomies and other endovascular procedures. If a program offers and performs any of these procedures, they will be expected to gather data on the appropriate metrics for those procedures such as door to puncture, recanalization, complications etc. (See DNV Stroke Program Required Metrics)

Primary Stroke Center (PSC)

A PSC has personnel, infrastructure, and expertise to evaluate, diagnose, treat and support stroke patients who require emergent medical care and specialized tests. The types of patients who might use and benefit from a PSC include patients with ischemic strokes and /or identified and diagnosed with large vessel occlusions, hemorrhagic strokes or strokes that may require more specialized testing and surgical or interventional therapies. PSCs will facilitate transfer to a higher level of care for patients who may need therapies or interventions not provided by the PSC, when indicated.

Some PSC hospitals will have the capability to perform some selected invasive treatments or procedures. If a PSC hospital does perform any endovascular procedures within its PSC program, DNV will include the review of these procedures during the survey process. These procedures can include but not be limited to surgical procedures, interventional procedures, coiling's, thrombectomies and other endovascular procedures. If a program offers and performs any of these procedures, they will also be expected to gather data on the appropriate metrics for those selected procedures such as door to puncture, recanalization, complications etc. (See DNV Stroke Program Required Metrics)

In addition, PSCs may also function as a resource center for other facilities in their region, such as other Primary Stroke Centers (PSC) and Acute Stroke Ready Hospitals (ASRs). This might include providing expertise about managing cases, offering guidance for triage of patients in collaboration with emergency medical service providers, making diagnostic tests or treatments available to patients treated initially at another facility and being an educational resource for other hospitals, healthcare facilities and health care professionals. (See DNV Stroke Program Required Metrics)

Primary Stroke Center Plus (PSC+)

A PSC+ has the personnel, infrastructure, and expertise to diagnose, treat and support stroke patients who require intensive medical/neurological care, specialized tests, or interventional therapies. The types of patients who might use and benefit from a PSC+ include, but are not limited to, patients with ischemic strokes, large vessel occlusions, hemorrhagic strokes, or strokes from unusual etiologies that may require specialized testing or interventional therapies such as but not limited to thrombectomies, as well as other endovascular procedures.

In addition, PSC+s function as a resource center for other facilities in their region, such as Primary Stroke Centers (PSC), and Acute Stroke Ready Hospitals (ASRs). This might include providing expertise about managing cases, offering guidance for triage of patients in collaboration with emergency medical service providers, making diagnostic tests or treatments available to patients treated initially at an ASR or PSC and being an educational resource for other hospitals and health care professionals. (See DNV Stroke Program Required Metrics)

Comprehensive Stroke Center (CSC)

A CSC delivers the highest quality of care to the most complex cases, offering evidence-based treatments with cutting-edge research protocols. A CSC has the personnel, infrastructure, and expertise to diagnose and treat stroke patients, who require highly intensive medical/neurological and surgical care, specialized test and/or interventional therapies.

CSCs can treat patients suffering hemorrhagic or large ischemic strokes, with follow up care in an intensive care unit. Other stroke incidents include patients with suspected aneurysmal subarachnoid hemorrhage, those with strokes from unusual etiologies or requiring specialized testing or therapies, such as endovascular surgery, and those requiring multispecialty management.

A CSC also functions as a resource center for other facilities in their area, offering guidance and consultation for the triage of patients, providing expertise about managing complicated cases, making diagnostic tests or treatments available to patients, treated initially at a PSC or an ASR facility, and being an educational resource for other hospitals

(See DNV Stroke Program Required Metrics)

REGULATORY AND POLICY REFERENCE

- The DNV Certification Process, Certification Requirements, and applicable CMS State Operations Manual (SOM) provide the framework for policies and procedures regarding certification activities.
- The Medicare Conditions of Participation for hospitals are in 42 CFR Part 482 (For American hospitals, only)
- American Stroke Association / American Heart Association - Guidelines for Stroke Patients and Establishment of Stroke Systems of Care.
- Brain Attack Coalition – Pathways and Guidelines
- [AHA Guidelines for the Early Management of Patient with Acute Ischemic Stroke](#)

Organizations seeking and maintaining a DNV stroke center certification must participate in the Medicare program and be following the Conditions of Participation (CoPs) of the Centers for Medicare and Medicaid Services (CMS). Compliance with the CMS CoPs may be demonstrated by maintaining accreditation with DNV or another accreditation organization, approved by CMS to deem healthcare organizations in compliance with the CoPs. (For American Hospitals, only)

This certification program document addresses healthcare organizations that are either applying to DNV Healthcare for certification of a stroke center certification program or are currently certified by DNV. When a healthcare organization has applied for but not received DNV stroke center certification, it is referred to as an “Applicant Organization.” When a healthcare organization is currently stroke certified by DNV, it is referred to as a “Certified Organization.”

The certification assessment survey is conducted separately and apart from a DNV Hospital Accreditation Survey or any other certification surveys. The stroke program will be provided with advance notice of the upcoming survey at least one month prior to the assessment.

ELIGIBILITY

Before the survey is scheduled, an organization must be able to demonstrate that they are eligible to become an applicant candidate and are in current compliance with all Medicare Conditions of Participation at the time of application and at the time of the survey.

See [PC.2 CR.1 for CSC](#)

See [PC.2 CR.2 for PSC+](#)

See [PC.2 CR.3 for PSC](#)

See [PC.2 CR.4 for ASR](#)

SURVEY PROCESS

Before the Survey

Organizations that are in the process of becoming an applicant organization will receive support from the DNV stroke program staff. The sales team acts as an account manager right at the beginning of the process, giving information about DNV, the stroke program, and assisting through the application and contract development. A member of the team will build a quote for your organization, based on general rates and how many facilities may be involved in the application.

As an organization works its way through a review of the standards, there is a clinical team that is available to answer implementation, compliance, and interpretive guideline questions. The DNV stroke program staff know that your success in meeting the standards will mean better outcomes and success for your patients. The stroke program was developed to partner with healthcare organizations to improve the delivery of stroke care to the patients, their families and the communities that are served.

The organization will complete an application that will be reviewed for initial eligibility by the DNV stroke program director. Once eligibility has been determined, the application will be processed, a contract will be developed and sent to the applicant.

For a recertification survey, the organization is required to submit a recertification attestation and update form within 60 days before the scheduled survey.

The scheduling department will then contact the identified person listed on the application to work with the applicant organization to select dates that are available for the survey. The stroke surveys are announced and conducted every year. This allows the applicant organization to arrange schedules and to send notices to everyone that would need to be at the facility during the stroke survey to represent their specific departments, processes, and responsibilities.

The assigned lead surveyor for the stroke survey will contact the stroke coordinator or other assigned person at the organization to introduce themselves, obtain any needed logistical information, answer any last-minute questions, and provide and review the proposed agenda.

During the Survey

Once on site, surveyors assess compliance with the certification requirements for services and locations in which the stroke program operates for patient care services. The objective of assessment activities is to determine compliance with the requirements through observations, interviews, and document review.

The surveyors will focus attention on:

- actual and potential patient outcomes
- required processes
- the care and services provided, including the appropriateness of the care and services within the context of the certification requirements, and identified best practices.
- leadership involvement, commitment, and oversight of program

The surveyors will visit:

- the emergency department
- imaging locations
- interventional/surgical suites
- ICU, designated inpatient units
- rehabilitation areas
- other patient care settings, as appropriate to the level of services provided.

The surveyors will review:

- stroke program policies
- stroke program protocols
- stroke management order sets
- stroke committee meeting minutes
- transfer agreements
- telemedicine process and documentation

DNV Integrated Stroke Center Certification Program Requirements

- on call schedules
- clinical records
- personnel files, competency, and required stroke education records
- provider credentialing files and required stroke education records
- other documentation necessary to validate information gained from observations and interviews.

After the Survey

Once the survey has been completed, you will receive your report within ten business days.

Survey Finding Definitions:

Nonconformance One (NC-1)

- Objective evidence exists that a certification requirement has not been addressed (intent), a practice differs from the defined system (implementation), or the system is not effective (effectiveness).
- The absence of one or more required system elements or a situation which raises significant doubt that the services will meet specified certification requirements.
- A group of NC-2 nonconformances indicating inadequate implementation or effectiveness of the system relevant to the certification requirement.
- An NC-2 nonconformance that is persistent (or not corrected as stated in the corrective action plan) shall be upgraded to NC-1, or a situation, that, based on available objective evidence, may directly lead to unacceptable risk of patient harm or does not meet minimum standards of care.

Condition Level Finding

- A Condition Level finding is an NC-1 nonconformance in which the program is determined to be completely or substantially out of compliance with the certification requirements.
- A Condition Level finding will be identified as an NC-1 nonconformance - Condition Level finding.
- All Condition Level findings will require a follow-up survey within sixty (60) calendar days from the last day of the survey.
- Certification cannot be continued until all Condition Level findings are reduced to an NC-1 nonconformance at the time of the follow-up survey.

Nonconformance Two (NC-2)

- A lapse of either discipline or control during the implementation of system/procedural requirements, which do not indicate a system breakdown or does not indicate a system breakdown that services will meet certification requirements. Overall system requirement is defined, implemented, and effective.
- As applicable, a finding as an NC-2 nonconformance may be:
- An isolated non-fulfillment of a requirement that is otherwise properly documented and implemented, or
- Inconsistent practice or,
- Significant enough to warrant the client to take action to prevent future occurrence and/or has the potential for becoming a NC-1 nonconformance.

Client Follow-up Required for Nonconformances

A Corrective Action Plan (CAP) shall be sent to DNV within ten (10) business days from the date of receipt of the final written report and address all reported elements of the nonconformances and/or all individual findings identified in the nonconformances.

The CAP shall:

- Identify the cause that led to the nonconformance
- Identify the actions taken to correct the nonconformance in the affected areas and/or processes
- Identify other areas and/or processes (if applicable) that have the potential to be affected by the same nonconformance
- Identify the process or system changes that will be made to ensure that the nonconformance does not recur including a staff training plan, as applicable
- Identify the time frame for the implementation of the corrective action measure(s) including specific dates of completion for corrections that have already been implemented before the CAP is submitted
- Identify the name of the person responsible for implementing the corrective action measure(s)

- Identify the performance measure(s) and/or other supporting evidence that will be monitored to ensure the effectiveness of the corrective action(s) taken.

DNV Follow-up with Client for Nonconformances

DNV will acknowledge receipt of the CAP and state any deficiencies and additional requirements with timelines for submission or declare acceptance of the submitted documentation. The organization is expected to implement corrective action measures within sixty (60) days. When this is not feasible, DNV will consider and evaluate the circumstances involved and approve a suitable timeframe to enable the client to implement the corrective action measure(s). Although such instances for extending the timeframe will be evaluated on a case-by-case basis, it would be a rare occurrence for the extended timeframe for implementation of corrective action measure(s) to exceed six (6) months.

For NC-1, as a requirement of the DNV Stroke Certification Program process, objective evidence is required within sixty (60) business days of DNV Healthcare communication to the organization of the acceptance of their Corrective Action Plan(s). The customer shall submit performance measure(s) data, findings, results of internal reviews (internal audits), or other supporting documentation, including timelines to verify implementation of the corrective action measure(s). If the objective data identifies continued noncompliance at the time of submission, the stroke center should include additional planned actions to address the continued nonconformance(s) identified.

If an NC-1 nonconformance results in a Condition Level finding, a follow-up survey within sixty (60) calendar days from the last day of the survey will also be required to determine compliance with the standard(s) specific to the NC-1 nonconformance. The scope and extent of the follow-up survey will be determined based upon the complexity of the nonconformance. One or more surveyors will be assigned to the follow-up survey. When possible, members of the survey team who conducted the survey when the nonconformance was issued will be assigned. When this is not feasible, DNV will assign a surveyor who is familiar with the process and has the qualifications to validate compliance.

For NC-2 nonconformances, once the corrective action plans have been accepted, there are no requirements to send further data or other information. Those findings and the accepted corrective action plan will be reviewed on site during the following year's survey for validation of implementation.

DNV will respond to the client regarding acceptance of the submitted documentation and identify any deficiencies and additional requirements with timelines for submission.

Considerations

The client is under no obligation to respond to comments and direct observations that the surveyor and the program staff may have discussed during the survey. These considerations are in two categories:

Observations: An Observation is not a nonconformance, but something that could lead to a nonconformance if allowed to continue uncorrected; or an existing condition without adequate supporting evidence to verify that it constitutes a non-conformity.

Opportunities for Improvement: An Opportunity for Improvement relates to areas and/or processes of the stroke program which may meet the minimum requirements for certification, but which could be improved. An opportunity for improvement may be system or performance related and is normally addressed based on the experience of the surveyor team, knowledge of best practice from other hospitals or from practices within other units/departments.

Suspension of Certification Status

Suspension of certification status may occur at annual or recertification surveys and shall be based on any of the following:

- Lack of continual fulfillment of the conditions set out in the Certification Agreement
- Condition level non-conformance identified in a stroke center certification survey
- Client fails to submit an acceptable CAP and/or related documentation
- Established reasonable timelines in a CAP are not met
- Client violates terms of the signed certification agreement, including non-payment of fees or refusal of access
- Failure to respond adequately to nonconformances identified during the program certification process

DNV Integrated Stroke Center Certification Program Requirements

- Client makes false public claims regarding its certification status. (e.g., certification status is used in a way that is unjustifiable or deceptive in advertising)
- Information from stakeholders that could affect the status of the certified program (e.g., non-compliance with regulatory/statutory requirements)
- Individuals are delivering patient care or providing services without a required valid license, certification, or registration
- Preventable issues that pose Immediate Jeopardy (has caused or is likely to cause serious injury, harm, impairment, or death)
- Non-compliance with statutory and regulatory requirements of state and/or federal law

The requirements that the certified program shall meet to be removed from suspension of certification status and the length of time a certified program may remain in suspension status shall be outlined in the Suspension of Certificate notification. Any extension shall be based on a progressing Corrective Action Plan that has been validated by a Special Survey.

For initial surveys, DNV awards the stroke certificate on the acceptance of the corrective action plan that has been submitted; however, there are some rare occasions where there is a valid concern about the organization's ability to address the non-conformities or if a serious patient issue is identified.

If that happens, the certificate will be delayed pending submission of corrective action data that is obtained to support that the issue is resolved or mitigated. At that time, further information and submitted data will be reviewed and a determination by the certification committee will be made. One recommendation may be to accept the submitted information and issue the certificate. One other recommendation may be that a surveyor needs to revisit on site for a day, to survey only those components that would be thought to need in person validation when on site would be required. Both processes, as described, happen rarely, but they do happen. This is a risk-based approach to our process, and we need to have a high confidence level at the initial survey.

Some circumstances that could trigger a delay in awarding of certification could include but not be limited to issues such as:

- Significant inadequate monitoring of patient's condition post administration of thrombolytics, post thrombectomies or other endovascular and/or surgical/invasive interventions
- Lack of 24/7/365 coverage for critical care
- Continual, frequently planned or specified diversion for neuro interventional or neurosurgical services due to lack of coverage.
- Loss or lack of medical staff to perform neuro interventions or neurosurgical services
- Lack of privileging for medical staff for performed procedures
- Lack of identified medical director of the stroke program
- Lack of identified registered nurse stroke coordinator
- Extended interruption or cessation of services

ABBREVIATIONS AND DEFINITIONS

ABEM	American Board of Emergency Medicine
ACEP	American College of Emergency Physicians
ACLS	Advanced Cardiac Life Support
AHA	American Heart Association
Alteplase	tissue plasminogen activator tPA (thrombolytic medication)
ASA	American Stroke Association
ASR	Acute Stroke Ready organization that can provide timely access to stroke care but not able to meet all the criteria for PSCs or CSCs
AOBEM	American Osteopathic Board of Emergency Medicine
AVM	Arteriovenous malformation
BAC	Brain Attack Coalition
BLS	Basic Life Support
CEA	Carotid Endarterectomy
CFR	Code of Federal Regulations
CMS	Centers for Medicare Medicaid Services
CR	Certification Requirement
CSC	Comprehensive Stroke Center
CT	Computed Tomography
CTA	Computed Tomography Angiography
CTP	Computed Tomography Perfusion
ECG	Electrocardiogram
ED	Emergency Department
EMS	Emergency Medical Services
ENLS	Emergency Neurological Life Support
EVD	External Ventricular Drain
Hyperacute phase	First 24 hours after onset of stroke
ICH	Intracerebral hemorrhage
ICP	Intracranial pressure

DNV Integrated Stroke Center Certification Program Requirements

ICU	Intensive Care Unit
LIP	Licensed Independent Practitioner
MRI/MRA	Magnetic Resonance Imaging/ Angiography
mRS	Modified Rankin Scale
NIHSS	National Institutes of Health Stroke Scale
NFPA	National Fire Protection Association
NICU	Neuro-Intensive Care Unit
NP	Nurse Practitioner
OT	Occupational Therapist
PA	Physician Assistant
PT	Physical Therapist
PSC	Primary Stroke Center
PSC Plus or (+)	Primary Stroke Center Plus (thrombectomy capable)
RN	Registered Nurse
SAH	Subarachnoid hemorrhage
SLP	Speech Language Pathologist
Telestroke/Telemedicine	An approach to treating vascular disease that allows a neurologist to provide remote treatment for a stroke victim. Electronic communications may include telephone, internet or video conferencing, providing consultation and diagnostic services.
Tenecteplase	tissue plasminogen activator TNKase (thrombolytic medication)
TIA	Transient Ischemic Attack
tPA	tissue plasminogen activator (thrombolytic medication)
Troponin	Complex of three regulatory proteins (troponin C, troponin I, and troponin T) that is integral to muscle contraction in skeletal muscle and cardiac muscle. Often elevated after stroke.

DIRECTORY OF APPLICABLE PROGRAM CERTIFICATION STANDARDS

Program Management Requirement Grid

All standards required for all levels of Stroke Programs (ASR, PSC, PSC+, CSC)

STANDARD NUMBER	ASR	PSC	PSC+	CSC
All Standards	X	X	X	X

Quality Management Requirement Grid

Required Standards depend not only on certification level, but also on scope of service

STANDARD NUMBER	ASR	PSC	PSC+	CSC
All Standards for QM.1 through QM.8	X	X	X	X
For QM.9	See Addendums Addendum A Addendum B Addendum C	See Addendums Addendum A Addendum B Addendum C	See Addendums Addendum A Addendum B Addendum C	See Addendums Addendum A Addendum B Addendum C

Patient Care Services Requirement Grid

Required Standards depend not only on certification level, but also on scope of service

STANDARD NUMBER	ASR	PSC	PSC+	CSC
PC.1	Planning for Service Delivery			
PC.1 CR.1	X	X	X	X
PC.1 CR.1 CR.1a	X	X	X	X
PC.1 CR.1 CR.1b	X	X	X	X
PC.1 CR.1 CR.1c	X	X	X	X
PC.1 CR.1 CR.1d	X	X	X	X
PC.2	Review of Initial Eligibility			
PC.2 CR.1				X
PC.2 CR.1 CR.1a				X
PC.2 CR.1 CR.1b				X
PC.2 CR.1 CR.1c				X
PC.2 CR.1 CR.1d				X
PC.2 CR.1 CR.1e				X
PC.2 CR.1 CR.1f				X
PC.2 CR.1 CR.1g				X
PC.2 CR.1 CR.1h				X
PC.2 CR.1 CR.1i				X
PC.2 CR.1 CR.1j				X
PC.2 CR.1 CR.1k				X
PC.2 CR.1 CR.1l				X
PC.2 CR.1 CR.1m				X
PC.2 CR.1 CR.1n				X
PC.2 CR.1 CR.1o				X
PC.2 CR.1 CR.1p				X
PC.2 CR.1 CR.1q				X
PC.2 CR.1 CR.1r				X
PC.2 CR.1 CR.1s				X
PC.2 CR.2			X	
PC.2 CR.2 CR.2a			X	
PC.2 CR.2 CR.2b			X	
PC.2 CR.2 CR.2c			X	
PC.2 CR.2 CR.2d			X	
PC.2 CR.2 CR.2e			X	
PC.2 CR.2 CR.2f			X	
PC.2 CR.2 CR.2g			X	
PC.2 CR.2 CR.2h			X	
PC.2 CR.2 CR.2i			X	
PC.2 CR.2 CR.2j			X	
PC.2 CR.2 CR.2k			X	
PC.2 CR.2 CR.2m			X	

DNV Integrated Stroke Center Certification Program Requirements

STANDARD NUMBER	ASR	PSC	PSC+	CSC
PC.2 CR.2 CR.2n			X	
PC.2 CR.2 CR.2o			X	
PC.2 CR.2 CR.2p			X	
PC.2 CR.2 CR.2q			X	
PC.2 CR.2 CR.2r			X	
PC.2 CR.3		X		
PC.2 CR.3 CR.3a		X		
PC.2 CR.3 CR.3b		X		
PC.2 CR.3 CR.3c		X		
PC.2 CR.3 CR.3d		X		
PC.2 CR.3 CR.3e		X		
PC.2 CR.3 CR.3f		X		
PC.2 CR.3 CR.3g		X		
PC.2 CR.3 CR.3h		X		
PC.2 CR.3 CR.3i		X		
PC.2 CR.3 CR.3j		X		
PC.2 CR.3 CR.3k		X		
PC.2 CR.3 CR.3l		X		
PC.2 CR.3 CR.3m		X		
PC.2 CR.3 CR.3n		X		
PC.2 CR.3 CR.3o		X		
PC.2 CR.3 CR.3p		X		
PC.2 CR.3 CR.3q		X		
PC.2 CR.3 CR.3r		X		
PC.2 CR.4	X			
PC.2 CR.4 CR.4a	X			
PC.2 CR.4 CR.4b	X			
PC.2 CR.4 CR.4c	X			
PC.2 CR.4 CR.4d	X			
PC.2 CR.4 CR.4e	X			
PC.2 CR.4 CR.4f	X			
PC.2 CR.4 CR.4g	X			
PC.2 CR.4 CR.4h	X			
PC.2 CR.4 CR.4i	X			
PC.2 CR.4 CR.4j	X			
PC.2 CR.4 CR.4k	X			
PC.2 CR.4 CR.4l	X			
PC.2 CR.4 CR.4m	X			
PC.2 CR.4 CR.4n	X			
PC.2 CR.4 CR.4o	X			
PC.2 CR.4 CR.4p	X			
PC.2 CR.4 CR.4q	X			
PC.2 CR.4 CR.4r	X			

DNV Integrated Stroke Center Certification Program Requirements

STANDARD NUMBER	ASR	PSC	PSC+	CSC
PC.3	Recertification Process and Requirements			
PC.3 CR.1				X
PC.3 CR.1 CR.1a				X
PC.3 CR.1 CR.1b				X
PC.3 CR.1 CR.1c				X
PC.3 CR.1 CR.1d				X
PC.3 CR.1 CR.1e				X
PC.3 CR.1 CR.1f				X
PC.3 CR.1 CR.1g				X
PC.3 CR.1 CR.1h				X
PC.3 CR.1 CR.1i				X
PC.3 CR.1 CR.1j				X
PC.3 CR.1 CR.1k				X
PC.3 CR.2			X	
PC.3 CR.2 CR.2a			X	
PC.3 CR.2 CR.2b			X	
PC.3 CR.2 CR.2c			X	
PC.3 CR.2 CR.2d			X	
PC.3 CR.2 CR.2e			X	
PC.3 CR.2 CR.2f			X	
PC.3 CR.2 CR.2g			X	
PC.3 CR.2 CR.2h			X	
PC.3 CR.2 CR.2i			X	
PC.3 CR.2 CR.2j			X	
PC.3 CR.3		X		
PC.3 CR.3 CR.3a		X		
PC.3 CR.3 CR.3b		X		
PC.3 CR.3 CR.3c		X		
PC.3 CR.3 CR.3d		X		
PC.3 CR.3 CR.3e		X		
PC.3 CR.3 CR.3f		X		
PC.3 CR.3 CR.3g		X		
PC.3 CR.3 CR.3h		X		
PC.3 CR.3 CR.3i		X		
PC.3 CR.3 CR.3j		X		
PC.3 CR.4	X			
PC.3 CR.4 CR.4a	X			
PC.3 CR.4 CR.4b	X			
PC.3 CR.4 CR.4c	X			
PC.3 CR.4 CR.4d	X			
PC.3 CR.4 CR.4e	X			
PC.3 CR.4 CR.4f	X			
PC.3 CR.4 CR.4g	X			

DNV Integrated Stroke Center Certification Program Requirements

STANDARD NUMBER	ASR	PSC	PSC+	CSC
PC.3 CR.4 CR.4h	X			
PC.3 CR.4 CR.4i	X			
PC.3 CR.4 CR.4j	X			
PC.4	Emergency Department			
PC.4 CR.1	X	X	X	X
PC.4 CR.2	X	X	X	X
PC.4 CR.3	X	X	X	X
PC.4 CR.4	X	X	X	X
PC.4 CR.4 CR.4a	X	X	X	X
PC.4 CR.4 CR.4b	X	X	X	X
PC.4 CR.4 CR.4c	X	X	X	X
PC.4 CR.4 CR.4d	X	X	X	X
PC.4 CR.4 CR.4e	X	X	X	X
PC.4 CR.4 CR.4f	X	X	X	X
PC.4 CR.4 CR.4g	X	X	X	X
PC.4 CR.4 CR.4h	X	X	X	X
PC.4 CR.4 CR.4i	X	X	X	X
PC.4 CR.5	X	X	X	X
PC.4 CR.6	X	X	X	X
PC.4 CR.7	X	X	X	X
PC.4 CR.8	X	X	X	X
PC.4 CR.8 CR.8a	X	X	X	X
PC.4 CR.8 CR.8b	X	X	X	X
PC.4 CR.8 CR.8c	X	X	X	X
PC.5	Emergency Medical Services			
PC.5 CR.1	X	X	X	X
PC.5 CR.1 CR.1a	X	X	X	X
PC.5 CR.1 CR.1b	X	X	X	X
PC.5 CR.1 CR.1c	X	X	X	X
PC.5 CR.1 CR.1d	X	X	X	X
PC.5 CR.1 CR.1e	X	X	X	X
PC.5 CR.1 CR.1f	X	X	X	X
PC.6	Telemedicine/Telestroke			
PC.6 CR.1	X	X	X	X
PC.6 CR.2	X	X	X	X
PC.7	Acute Stroke Team			
PC.7 CR.1	X	X	X	X
PC.7 CR.1 CR.1a	X	X	X	X
PC.7 CR.1 CR.1b	X	X	X	X
PC.7 CR.1 CR.1c	X	X	X	X
PC.7 CR.1 CR.1d	X	X	X	X
PC.7 CR.2	X	X	X	X
PC.7 CR.2 CR.2a	X	X	X	X

DNV Integrated Stroke Center Certification Program Requirements

STANDARD NUMBER	ASR	PSC	PSC+	CSC
PC.8	Protocols			
PC.8 CR.1	X	X	X	X
PC.8 CR.1 CR.1a	X	X	X	X
PC.8 CR.1 CR.1b	X	X	X	X
PC.8 CR.1 CR.1c	X	X	X	X
PC.8 CR.1 CR.1d	X	X	X	X
PC.8 CR.1 CR.1e	X	X	X	X
PC.8 CR.1 CR.1f	X	X	X	X
PC.8 CR.1 CR.1g	X	X	X	X
PC.8 CR.1 CR.1h	X	X	X	X
PC.8 CR.1 CR.1i	X	X	X	X
PC.8 CR.1 CR.1j	X	X	X	X
PC.8 CR.1 CR.1k	X	X	X	X
PC.8 CR.2	X	X	X	X
PC.8 CR.3	X	X	X	X
PC.8 CR.3 CR.3a	X	X	X	X
PC.8 CR.3 CR.3b	X	X	X	X
PC.8 CR.3 CR.3c	X	X	X	X
PC.8 CR.3 CR.3d	X	X	X	X
PC.8 CR.3 CR.3e	X	X	X	X
PC.8 CR.3 CR.3f	X	X	X	X
PC.8 CR.3 CR.3g	X	X	X	X
PC.8 CR.3 CR.3h	X	X	X	X
PC.8 CR.3 CR.3i	If applicable	If applicable	If applicable	X
PC.9	Transfer Agreement			
PC.9 CR.1	X	X	X	X
PC.9 CR.1 CR.1a	X	X	X	X
PC.9 CR.1 CR.1b	X	X	X	X
PC.9 CR.1 CR.1c	X	X	X	X
PC.9 CR.1 CR.1d	X	X	X	X
PC.9 CR.1 CR.1e	X	X	X	X
PC.9 CR.2	X	X	X	X
PC.10	Plan of Care			
PC.10 CR.1	X	X	X	X
PC.10 CR.2	X	X	X	X
PC.10 CR.3	X	X	X	X
PC.10 CR.4	X	X	X	X
PC.10 CR.5	X	X	X	X
PC.10 CR.5 CR.5a	X	X	X	X
PC.10 CR.5 CR.5a CR.5a(1)	X	X	X	X
PC.10 CR.5 CR.5a CR.5a(2)	X	X	X	X
PC.10 CR.5 CR.5a CR.5a(3)	X	X	X	X
PC.10 CR.5 CR.5a CR.5a(4)	X	X	X	X

DNV Integrated Stroke Center Certification Program Requirements

STANDARD NUMBER	ASR	PSC	PSC+	CSC
PC.10 CR.5 CR.5a CR.5a(5)	X	X	X	X
PC.10 CR.5 CR.5a CR.5a(6)	X	X	X	X
PC.10 CR.6	X	X	X	X
PC.11	Medication Management			
PC.11 CR.1	X	X	X	X
PC.11 CR.2	X	X	X	X
PC.11 CR.3	X	X	X	X
PC.11 CR.4 CR.4a	X	X	X	X
PC.11 CR.4 CR.4b	X	X	X	X
PC.11 CR.5	X	X	X	X
PC.11 CR.6	X	X	X	X
PC.11 CR.6 CR.6a	X	X	X	X
PC.11 CR.6 CR.6b	X	X	X	X
PC.11 CR.6 CR.6c	X	X	X	X
PC.12	Diagnostic Tests			
PC.12 CR.1	X	X	X	X
PC.12 CR.2	X	X	X	X
PC.12 CR.2 CR.2a	X	X	X	X
PC.12 CR.3	X	X	X	X
PC.12 CR.3 CR.3a	X	X	X	X
PC.12 CR.3 CR.3b	X	X	X	X
PC.12 CR.4	X	X	X	X
PC.12 CR.4 CR.4a	X	X	X	X
PC.12 CR.5	X	X	X	X
PC.12 CR.6				X
PC.12 CR.7				X
PC.12 CR.8				X
PC.12 CR.9				X
PC.12 CR.10				X
PC.13	Rehabilitation Services			
PC.13 CR.1	X	X	X	X
PC.13 CR.2	X	X	X	X
PC.13 CR.2 CR.2a	X	X	X	X
PC.13 CR.2 CR.2b	X	X	X	X
PC.13 CR.2 CR.2c	X	X	X	X
PC.13 CR.2 CR.2d	X	X	X	X
PC.13 CR.3	X	X	X	X
PC.13 CR.4	X	X	X	X
PC.14	Patient/Family/Community Education			
PC.14 CR.1	X	X	X	X
PC.14 CR.1 CR.1a	X	X	X	X
PC.14 CR.1 CR.1b	X	X	X	X
PC.14 CR.1 CR.1c	X	X	X	X

DNV Integrated Stroke Center Certification Program Requirements

STANDARD NUMBER	ASR	PSC	PSC+	CSC
PC.14 CR.2		X	X	X
PC.14 CR.2 CR.2a	X			
PC.14 CR.3	X	X	X	X
PC.14 CR.3 CR.3a	X	X	X	X
PC.14 CR.3 CR.3b	X	X	X	X
PC.14 CR.3 CR.3c	X	X	X	X
PC.14 CR.3 CR.3d	X	X	X	X
PC.14 CR.4	X	X	X	X

Medical Staff Requirement Grid

Required Standards depend not only on certification level, but also on scope of service

STANDARD NUMBER	ASR	PSC	PSC+	CSC
MS.1	Credentialing and Privileging			
MS.1 CR.1	X	X	X	X
MS.1 CR.2	X	X	X	X
MS.1 CR.3	X	X	X	X
MS.1 CR.4	X	X	X	X
MS.1 CR.4 CR.4a	X	X	X	X
MS.2	Stroke Program Medical Director			
MS.2 CR.1				X
MS.2 CR.2			X	
MS.2 CR.3		X		
MS.2 CR.4	X			
MS.2 CR.5	X	X	X	X
MS.2 CR.6	X	X	X	X
MS.2 CR.7	X	X	X	X
MS.2 CR.7 CR.7a	X	X	X	X
MS.3	Medical Management and Coverage			
MS.3 CR.1	X	X	X	X
MS.3 CR.2	X	X	X	X
MS.3 CR.2 CR.2a	X	X	X	X
MS.3 CR.3	X	X	X	X
MS.3 CR.4	X	X	X	X
MS.3 CR.4 CR.4a	X	X	X	X
MS.3 CR.5	X	X	X	X
MS.4	Neurosurgical Services Coverage			
MS.4 CR.1	X	X	X	X
MS.4 CR.1 CR.1a	X	X	X	X
MS.4 CR.2	X	X	X	X
MS.4 CR.3	X	X	X	X
MS.4 CR.3 CR.3a	X	X	X	X
MS.4 CR.3 CR.3b	X	X	X	X
MS.4 CR.4	X	X	X	
MS.4 CR.4 CR.4a	X	X	X	
MS.4 CR.4 CR.4b	X	X	X	
MS.4 CR.5	X	X	X	X
MS.5	ICU / Critical Care Management and Coverage			
MS.5 CR.1	If provided	X	X	X
MS.5 CR.1 CR.1a	If provided	X	X	X
MS.5 CR.2	If provided	X	X	X
MS.5 CR.2 CR.2a	If provided	X	X	X
MS.5 CR.2 CR.2b	If provided	X	X	X
MS.5 CR.2 CR.2c	If provided	X	X	X

DNV Integrated Stroke Center Certification Program Requirements

STANDARD NUMBER	ASR	PSC	PSC+	CSC
MS.6	Interventional / Neuroendovascular Services and Coverage			
MS.6 CR.1	If provided	If provided	X	X
MS.6 CR.2	If provided	If provided	X	X
MS.6 CR.2 CR.2a	If provided	If provided	X	X
MS.6 CR.3	If provided	If provided	X	X
MS.6 CR.4	If provided	If provided	X	X
MS.6 CR.5	If provided	If provided	X	X
MS.7	Stroke Telemedicine Services			
MS.7 CR.1	X	X	X	X
MS.7 CR.1 CR.1a	X	X	X	X
MS.7 CR.2	X	X	X	X

Anesthesia Services Requirement Grid

All standards required for all levels of Stroke Programs (ASR, PSC, PSC+, CSC)

STANDARD NUMBER	ASR	PSC	PSC+	CSC
All standards	X	X	X	X

Nursing Services Requirement Grid

All standards required for all levels of Stroke Programs (ASR, PSC, PSC+, CSC)

STANDARD NUMBER	ASR	PSC	PSC+	CSC
All Standards	X	X	X	X

Staffing Management Requirement Grid

All standards required for all levels of Stroke Programs (ASR, PSC, PSC+, CSC)

TANDARD NUMBER	ASR	PSC	PSC+	CSC
All Standards	X	X	X	X

Patient Rights Requirement Grid

All standards required for all levels of Stroke Programs (ASR, PSC, PSC+, CSC)

STANDARD NUMBER	ASR	PSC	PSC+	CSC
All Standards	X	X	X	X

Medical Records Requirement Grid

All standards required for all levels of Stroke Programs (ASR, PSC, PSC+, CSC)

STANDARD NUMBER	ASR	PSC	PSC+	CSC
All Standards	X	X	X	X

Physical Environment Requirements Grid

All standards required for all levels of Stroke Programs (ASR, PSC, PSC+, CSC)

STANDARD NUMBER	ASR	PSC	PSC+	CSC
All Standards	X	X	X	X

INTEGRATED STROKE CENTER CERTIFICATION PROGRAM REQUIREMENTS

Version 25.0

Program Management Requirement Grid

All standards required for all levels of Stroke Programs (ASR, PSC, PSC+, CSC)

STANDARD NUMBER	ASR	PSC	PSC+	CSC
All Standards	X	X	X	X

PROGRAM MANAGEMENT (PM)

The [host hospital](#) senior management shall establish, document, implement and maintain the stroke program and continually improve its effectiveness in accordance with the requirements of this certification program. The [host hospital](#) senior management is responsible for the framework in which the stroke program operates.

PM.1 Host Hospital Senior Management

CR.1 [Host hospital](#) senior management is responsible and accountable for ensuring the following:

- CR.1a The [host hospital](#) is in compliance with all applicable [local](#), state and federal laws regarding the health and safety of its patients.
- CR.1b The [host hospital](#) is licensed by the appropriate state or local authority responsible for licensing of stroke programs (if applicable).
- CR.1c Communicating to the stroke program the importance of meeting customer as well as statutory and regulatory requirements.
- [CR.1d](#) Establishing and assisting in meeting the stroke programs mission, goals, and objectives.
- [CR.1e](#) Ensuring the availability of resources and information necessary to support the operation.
- CR.1f The [host hospital](#) will ensure that adequate resources are allocated for measuring, assessing, improving, and sustaining the stroke center's performance and reducing risk to patients.
- [CR.1g](#) Criteria for hiring, appointments and privileging include aspects of individual character, competence, training, experience, and judgment. Criteria will be established for the selection of individuals working for the stroke program, directly or under contract.
- [CR.1h](#) That all personnel working in the stroke program are properly licensed, certified or otherwise meet all applicable state, federal, and local laws.
- [CR.1i](#) Responsibilities and authorities are defined and communicated within the stroke program.
- [CR.1j](#) Appointment, privileging and re-privileging of a stroke program medical director who is charged with the overall management of the stroke care provided by the stroke program. The medical director for the stroke program must have training and expertise in cerebrovascular disease or other criteria agreed on by the medical staff and the [host hospital](#) governing body.
- [CR.1k](#) Appointment, privileging and re-privileging of all practitioners who are performing procedures or involved in stroke program activities that may require specific skills, training, and/or education.

CR.2 The stroke medical director or designee shall be currently privileged to provide care. The stroke medical director or designee is available 24/7/365 to provide leadership on medical, logistical and administrative issues.

- CR.2a The director shall be involved in the assessment of patients and provide consultative advice to other treating physicians.
- CR.2b There shall be a written delineation of scope, coverage (including back up), authority and responsibilities of the stroke medical director.
- CR.2c If there is a co-program medical director identified, there shall be a written delineation of scope, coverage (including back up), authority and responsibilities of each co-director.

CR.3 Employ and retain a registered nurse stroke coordinator who is responsible for establishing, implementing, monitoring and evaluating stroke program components required in accordance with the requirements of the Stroke Center Certification Program.

- [CR.3a](#) If an identified stroke coordinator is not a registered nurse, there must be an equivalent appointment of an identified registered nurse who is responsible for establishing, implementing, monitoring and evaluation of the stroke program requirements that are exclusively under the scope of practice that is required by CMS for nursing evaluating and supervising nursing care.

Interpretive Guideline:

It is essential for the stroke coordinator role to have expertise in stroke clinical knowledge and skills to support the provision and supervision of the care of the patient who is experiencing stroke symptoms, treatment and ongoing recovery. The RN stroke coordinator serves as a role model who provides bedside education that is meant to ensure clinical competency. CMS requires that an RN must evaluate the care for each patient upon admission and on an ongoing basis in accordance with accepted standards of nursing practice, stroke clinical practice guidelines

and hospital policies and protocols for patient assessment, medication administration, monitoring, and patient education.

An RN must assign the nursing care of each patient to other nursing personnel in accordance with the patient's assessed needs and the specialized qualifications and competence of the nursing staff.

An RN stroke coordinator oversees nursing staff competencies and the need for both required and additional education and training identified through performance reviews, direct observation or quality data.

A non-nurse may not supervise nursing practice but could supervise basic employment issues such as administrative supervision, human resources issues such as time, attendance etc.

CR.4 Each stroke program nurse coordinator/manager should attend a national or regional meeting at least every other year that focuses on some aspect of cerebrovascular disease.

PM.2 Stroke Program Leadership

The stroke program leadership shall:

CR.1 Define in writing the program's mission, goals, objectives and scope of service which describes the design, implementation and evaluation of the processes needed for the stroke program service delivery.

CR.2 Determine criteria and methods needed for both the operations and consistent control of processes, to ensure consistent, effective care and treatment.

CR.2a Conduct program reviews, at least annually, to determine progress and achievement towards goals, objectives and outcomes.

CR.3 Monitor, measure and analyze identified program processes, and:

CR.3a Implement actions necessary to achieve planned results and continual improvement of those selected program processes.

CR.3b When the stroke center program requirements are revised, the stroke program leadership shall ensure that relevant documents are amended and that relevant personnel are made aware of the revised requirements.

Quality Management Requirement Grid

Required Standards depend not only on certification level, but also on scope of service

STANDARD NUMBER	ASR	PSC	PSC+	CSC
All Standards for QM.1 through QM.8	X	X	X	X
For QM.9	See Addendums Addendum A Addendum B Addendum C	See Addendums Addendum A Addendum B Addendum C	See Addendums Addendum A Addendum B Addendum C	See Addendums Addendum A Addendum B Addendum C

QUALITY MANAGEMENT (QM)

QM.1 Management

The governing body (or organized group or individual who assumes full legal authority and responsibility for operations of the stroke program), medical staff, and administrative officials are responsible and accountable for ensuring that the stroke program implements and is included in the [host hospital](#) quality management system. The [host hospital](#) will ensure that adequate resources are allocated for measuring, assessing, improving, and sustaining the stroke center's performance and reducing risk to patients.

- CR.1 The stroke center must be involved in and implement the [host hospital's](#) method for maintaining an ongoing system for managing quality and patient safety.
- CR.2 The stroke center must implement quality assessment and performance improvement efforts to address priorities for improved quality of care and patient safety and that corrective and preventive actions are implemented and evaluated for effectiveness.
- CR.3 The stroke center has established programmatic measurable quality goals, objectives, and the results are analyzed and addressed.
- CR.4 Quality information from the stroke program has been submitted to the [host hospital](#) oversight group for review and management as required.

QM.2 Quality Outline/Plan

The stroke program shall clearly outline its methodology, practice, and related policies for addressing how quality and performance are measured, monitored, analyzed, and continually improved to improve health outcomes and reduce risks for patients.

QM.3 Quality Objectives

Program management shall ensure that the stroke program's quality objectives, including those needed to meet requirements for the stroke center, are established. The quality objectives shall be measurable and consistent with the requirements of the stroke center certification program.

QM.4 Quality Representative

A quality representative shall be designated and shall have the responsibility and authority for ensuring that the monitoring requirements of the stroke program are implemented and maintained.

Interpretive Guideline:

The registered nurse stroke coordinator or advanced nurse practitioner may also serve as the quality representative.

QM.5 Stroke Program Review

- CR.1 Variations, deficiencies or non-conformities identified by the stroke program shall be addressed by the stroke committee. Corrective actions will be determined, applied, documented, and reviewed for outcomes.
- CR.2 Program processes and data review will be performed at regular intervals, at a minimum of once a quarter, with an annual evaluation of the effectiveness of the stroke program components and metrics.
([See PM.2 CR.2a](#))

QM.6 System Requirements

The stroke center will participate in and follow the system requirements of the host hospital in establishing a quality system. The stroke center will be required to have the following as a part of this system:

- CR.1 An interdisciplinary stroke committee shall oversee the stroke center specific quality data. The membership shall include, at a minimum:
 - the medical director of the stroke center
 - the registered nurse stroke coordinator
 - a quality representative

This will be considered the Core Stroke Team. Other discipline representatives and practitioner members of the stroke committee are at the discretion of the stroke center leadership. This interdisciplinary stroke committee shall conduct quality and programmatic reviews.

CR.2 There shall be a written document defining the quality oversight process, to include the following components of the stroke center clinical and non-clinical services:

CR.2a measurable quality objectives

CR.2b goal measurement / prioritization of activities based in some manner to consider:

- problem-prone areas, processes, or functions
- the incidence, prevalence, and severity of problems in these areas, processes, or functions
- effect on health outcomes
- improving patient safety and quality of care

QM.7 Measurement, Monitoring, Analysis

The stroke program shall strive to optimize its overall effectiveness of processes and systems of the service. This goal will be accomplished by identifying performance measures for each component and for the system function as a whole, including structure, process and outcome measures. Evaluations of the stroke program shall encompass overall patient outcomes, linkages among key components of the stroke program, as well as potential problems that may impede the care provided under the stroke program.

Measurement, monitoring and analysis of the processes of the stroke program require established measures that can detect variation, identify problem processes, identify both positive and negative outcomes and effectiveness of actions taken to improve performance and/or reduce risks.

The stroke program leadership shall be responsible for the development of performance measures and strategies for measuring, refining and reassessing.

CR.1 Stroke program leadership shall define the frequency and detail of measurements for, at a minimum, the following key system components.

CR.1a EMS pre-hospital data, including data exchange between EMS, ED and the stroke team.

CR.2 Hyperacute (all stroke alert patients) are included in the collection of these specific performance measures involving the timeliness of the initiation of acute assessment and treatment.

CR.2a door to ED physician/provider less than or equal to 10 minutes

CR.2b door to stroke team in less than or equal to 15 minutes

CR.2c door to CT interpretation less than or equal to 45 minutes

CR.2d order to lab results less than or equal to 45 minutes

CR.2e Telestroke consultation, request to connected contact within 20 minutes, if applicable

CR.2f achieving door to needle times (time of bolus) within 60 minutes in 75% or more of acute ischemic stroke patients treated with IV thrombolytics

AND

achieving door to needle times (time of bolus) within 45 minutes in 50% or more of acute ischemic stroke patients treated with IV thrombolytics.

CR.2g transfer of patients to an equal or higher level of care in less than or equal to 2 hours of ED arrival, or when medically stable (Door-in-Door out (DIDO))

Interpretive Guideline

This data will capture stroke team response time to acute stroke patients, treatments used and patient disposition.

DNV Integrated Stroke Center Certification Program Requirements

CR.3 There shall be secondary prevention measures of patient outcomes and avoidance of complications and recurrent strokes. (See Table Below)

#	Stroke Measurement	Ischemic	Hemorrhagic	TIA
3a	Venous Thromboembolism Prevention (VTE)	x	x	
3b	Discharged on Antithrombotic Therapy	x		x
3c	Anticoagulation Therapy for Atrial Fibrillation	x		x
3d	Thrombolytic Therapy	x		
3e	Antithrombotic Therapy by end of day 2	x		x
3f	Discharged on statin medication* <i>*High or moderate intensity statin per age recommendation</i>	x		x
3g	Dysphagia Screen	x	x	
3h	Stroke Education (patient and family)	x	x	x
3i	Assessed for Rehabilitation	x	x	

CR.4 Percentage of assessments completed on patients and identification of impairments within 24 hours of admission or when feasible once the patient is medically stable. Assessment by telehealth is acceptable.

CR.4a Percentage of assessments completed on stroke patients and identification of impairments by the [physical therapist](#) within 24 hours of admission or when feasible once the patient is medically stable.

CR.4b [Percentage of assessments completed on stroke patients and identification of impairments by the occupational therapist within 24 hours of admission or when feasible once the patient is medically stable.](#)

CR.4c [Percentage of reassessments within 24 hours of admission by speech therapists to evaluate a stroke patient for dysphagia if patient has been made NPO and/or failed an initial swallow screen.](#)

Interpretive Guideline:

There shall be rehabilitation performance measures to evaluate patient outcomes, functional status, and potential discharge needs and the percentage of stroke patients who receive the appropriate level of rehabilitation services in the system. (Applies only if stroke patients are admitted for more than end of life/comfort measures.) Patients transferred out directly from the emergency department are excluded from this measure.

CR.5 There shall be community education performance measures, evaluating community outreach initiatives by measuring the knowledge in the community about the causes, signs and symptoms of stroke as well as emerging stroke prevention strategies. ([See PC.14 CR.4](#))

CR.6 Functional status and discharge outcome measures:

CR.6a [percentage](#) of patients that have a Pre-Morbid Modified Rankin Score by or at discharge (Applies to all stroke patients, [including Ischemic, Hemorrhagic and TIA](#), who are admitted for more than end of life/comfort measures)

CR.6b [percentage](#) of patients that have a Modified Rankin Score at time of discharge from the stroke center (Applies to all stroke patients, [including ischemic, hemorrhagic and TIA](#), who are admitted for more than end of life/comfort measures)

Interpretive Guideline:

[CR.6c Percentage of patients that have a Modified Rankin Score 90-days after discharge.](#)
(Moved and scored at [QM.9 CR.9](#))

CR.7 The stroke center shall monitor all complication rates and overall outcomes associated with stroke related treatments.

CR.7a Rate of mortality for patients who have thrombolytic administration, aneurysm clipping, coiling, and other interventional procedures, shall be documented and reviewed.

CR.7b A formal Morbidity and Mortality process shall review all cases that meet defined quality indicators and/or peer review criteria set by the medical staff. Records of the Morbidity and Mortality review and actions arising from the review shall be maintained.

QM.8 Patient Safety System

CR.1 The stroke center shall follow and participate in the [host hospital](#)'s program to establish clear expectations for identifying and detecting the prevalence and severity of incidents that impact or threaten stroke patient safety.

CR.1a This may include data such as falls, medication errors, safety initiatives etc. The [host hospital](#) will determine data designation for inclusion in program as well as any indicators specific to the safety of the stroke programs population as determined by the stroke committee. (i.e., sepsis, central line associated bloodstream infection (CLABSI), catheter associated urinary tract infection (CAUTI), dysphagia/aspiration pneumonia, ventriculitis)

Interpretive Guideline:

The stroke program leadership shall assure that host hospital risk management data is reviewed for the specific stroke patient population affected. No new measurements or indicators are required. This is a review of already existing data as it pertains to the stroke population. Review of data for trends, patterns and identification of problems shall be documented in the minutes of the stroke committee.

QM.9 Stroke Center Metrics for Measuring Processes and Quality

(See Addendum [A: DNV Metrics for Measuring Processes and Quality](#))

(See Addendum [B: Get With the Guidelines DNV Layer Measures](#))

(See Addendum [C: DNV GWTG Crosswalk](#))

Patient Care Requirement Grid

Required Standards depend not only on certification level, but also on scope of service

STANDARD NUMBER	ASR	PSC	PSC+	CSC
PC.1	Planning for Service Delivery			
PC.1 CR.1	X	X	X	X
PC.1 CR.1 CR.1a	X	X	X	X
PC.1 CR.1 CR.1b	X	X	X	X
PC.1 CR.1 CR.1c	X	X	X	X
PC.1 CR.1 CR.1d	X	X	X	X
PC.2	Review of Initial Eligibility			
PC.2 CR.1				X
PC.2 CR.1 CR.1a				X
PC.2 CR.1 CR.1b				X
PC.2 CR.1 CR.1c				X
PC.2 CR.1 CR.1d				X
PC.2 CR.1 CR.1e				X
PC.2 CR.1 CR.1f				X
PC.2 CR.1 CR.1g				X
PC.2 CR.1 CR.1h				X
PC.2 CR.1 CR.1i				X
PC.2 CR.1 CR.1j				X
PC.2 CR.1 CR.1k				X
PC.2 CR.1 CR.1l				X
PC.2 CR.1 CR.1m				X
PC.2 CR.1 CR.1n				X
PC.2 CR.1 CR.1o				X
PC.2 CR.1 CR.1p				X
PC.2 CR.1 CR.1q				X
PC.2 CR.1 CR.1r				X
PC.2 CR.1 CR.1s				X
PC.2 CR.2			X	
PC.2 CR.2 CR.2a			X	
PC.2 CR.2 CR.2b			X	
PC.2 CR.2 CR.2c			X	
PC.2 CR.2 CR.2d			X	
PC.2 CR.2 CR.2e			X	
PC.2 CR.2 CR.2f			X	
PC.2 CR.2 CR.2g			X	
PC.2 CR.2 CR.2h			X	
PC.2 CR.2 CR.2i			X	
PC.2 CR.2 CR.2j			X	
PC.2 CR.2 CR.2k			X	
PC.2 CR.2 CR.2m			X	
PC.2 CR.2 CR.2n			X	

DNV Integrated Stroke Center Certification Program Requirements

STANDARD NUMBER	ASR	PSC	PSC+	CSC
PC.2 CR.2 CR.2o			X	
PC.2 CR.2 CR.2p			X	
PC.2 CR.2 CR.2q			X	
PC.2 CR.2 CR.2r			X	
PC.2 CR.3		X		
PC.2 CR.3 CR.3a		X		
PC.2 CR.3 CR.3b		X		
PC.2 CR.3 CR.3c		X		
PC.2 CR.3 CR.3d		X		
PC.2 CR.3 CR.3e		X		
PC.2 CR.3 CR.3f		X		
PC.2 CR.3 CR.3g		X		
PC.2 CR.3 CR.3h		X		
PC.2 CR.3 CR.3i		X		
PC.2 CR.3 CR.3j		X		
PC.2 CR.3 CR.3k		X		
PC.2 CR.3 CR.3l		X		
PC.2 CR.3 CR.3m		X		
PC.2 CR.3 CR.3n		X		
PC.2 CR.3 CR.3o		X		
PC.2 CR.3 CR.3p		X		
PC.2 CR.3 CR.3q		X		
PC.2 CR.3 CR.3r		X		
PC.2 CR.4	X			
PC.2 CR.4 CR.4a	X			
PC.2 CR.4 CR.4b	X			
PC.2 CR.4 CR.4c	X			
PC.2 CR.4 CR.4d	X			
PC.2 CR.4 CR.4e	X			
PC.2 CR.4 CR.4f	X			
PC.2 CR.4 CR.4g	X			
PC.2 CR.4 CR.4h	X			
PC.2 CR.4 CR.4i	X			
PC.2 CR.4 CR.4j	X			
PC.2 CR.4 CR.4k	X			
PC.2 CR.4 CR.4l	X			
PC.2 CR.4 CR.4m	X			
PC.2 CR.4 CR.4n	X			
PC.2 CR.4 CR.4o	X			
PC.2 CR.4 CR.4p	X			
PC.2 CR.4 CR.4q	X			
PC.2 CR.4 CR.4r	X			

DNV Integrated Stroke Center Certification Program Requirements

STANDARD NUMBER	ASR	PSC	PSC+	CSC
PC.3	Recertification Process and Requirements			
PC.3 CR.1				X
PC.3 CR.1 CR.1a				X
PC.3 CR.1 CR.1b				X
PC.3 CR.1 CR.1c				X
PC.3 CR.1 CR.1d				X
PC.3 CR.1 CR.1e				X
PC.3 CR.1 CR.1f				X
PC.3 CR.1 CR.1g				X
PC.3 CR.1 CR.1h				X
PC.3 CR.1 CR.1i				X
PC.3 CR.1 CR.1j				X
PC.3 CR.1 CR.1k				X
PC.3 CR.2			X	
PC.3 CR.2 CR.2a			X	
PC.3 CR.2 CR.2b			X	
PC.3 CR.2 CR.2c			X	
PC.3 CR.2 CR.2d			X	
PC.3 CR.2 CR.2e			X	
PC.3 CR.2 CR.2f			X	
PC.3 CR.2 CR.2g			X	
PC.3 CR.2 CR.2h			X	
PC.3 CR.2 CR.2i			X	
PC.3 CR.2 CR.2j			X	
PC.3 CR.3		X		
PC.3 CR.3 CR.3a		X		
PC.3 CR.3 CR.3b		X		
PC.3 CR.3 CR.3c		X		
PC.3 CR.3 CR.3d		X		
PC.3 CR.3 CR.3e		X		
PC.3 CR.3 CR.3f		X		
PC.3 CR.3 CR.3g		X		
PC.3 CR.3 CR.3h		X		
PC.3 CR.3 CR.3i		X		
PC.3 CR.3 CR.3j		X		
PC.3 CR.4	X			
PC.3 CR.4 CR.4a	X			
PC.3 CR.4 CR.4b	X			
PC.3 CR.4 CR.4c	X			
PC.3 CR.4 CR.4d	X			
PC.3 CR.4 CR.4e	X			
PC.3 CR.4 CR.4f	X			
PC.3 CR.4 CR.4g	X			

DNV Integrated Stroke Center Certification Program Requirements

STANDARD NUMBER	ASR	PSC	PSC+	CSC
PC.3 CR.4 CR.4h	X			
PC.3 CR.4 CR.4i	X			
PC.3 CR.4 CR.4j	X			
PC.4	Emergency Department			
PC.4 CR.1	X	X	X	X
PC.4 CR.2	X	X	X	X
PC.4 CR.3	X	X	X	X
PC.4 CR.4	X	X	X	X
PC.4 CR.4 CR.4a	X	X	X	X
PC.4 CR.4 CR.4b	X	X	X	X
PC.4 CR.4 CR.4c	X	X	X	X
PC.4 CR.4 CR.4d	X	X	X	X
PC.4 CR.4 CR.4e	X	X	X	X
PC.4 CR.4 CR.4f	X	X	X	X
PC.4 CR.4 CR.4g	X	X	X	X
PC.4 CR.4 CR.4h	X	X	X	X
PC.4 CR.4 CR.4i	X	X	X	X
PC.4 CR.5	X	X	X	X
PC.4 CR.6	X	X	X	X
PC.4 CR.7	X	X	X	X
PC.4 CR.8	X	X	X	X
PC.4 CR.8 CR.8a	X	X	X	X
PC.4 CR.8 CR.8b	X	X	X	X
PC.4 CR.8 CR.8c	X	X	X	X
PC.5	Emergency Medical Services			
PC.5 CR.1	X	X	X	X
PC.5 CR.1 CR.1a	X	X	X	X
PC.5 CR.1 CR.1b	X	X	X	X
PC.5 CR.1 CR.1c	X	X	X	X
PC.5 CR.1 CR.1d	X	X	X	X
PC.5 CR.1 CR.1e	X	X	X	X
PC.5 CR.1 CR.1f	X	X	X	X
PC.6	Telemedicine/Telestroke			
PC.6 CR.1	X	X	X	X
PC.6 CR.2	X	X	X	X
PC.7	Acute Stroke Team			
PC.7 CR.1	X	X	X	X
PC.7 CR.1 CR.1a	X	X	X	X
PC.7 CR.1 CR.1b	X	X	X	X
PC.7 CR.1 CR.1c	X	X	X	X
PC.7 CR.1 CR.1d	X	X	X	X
PC.7 CR.2	X	X	X	X
PC.7 CR.2 CR.2a	X	X	X	X

DNV Integrated Stroke Center Certification Program Requirements

STANDARD NUMBER	ASR	PSC	PSC+	CSC
PC.8	Protocols			
PC.8 CR.1	X	X	X	X
PC.8 CR.1 CR.1a	X	X	X	X
PC.8 CR.1 CR.1b	X	X	X	X
PC.8 CR.1 CR.1c	X	X	X	X
PC.8 CR.1 CR.1d	X	X	X	X
PC.8 CR.1 CR.1e	X	X	X	X
PC.8 CR.1 CR.1f	X	X	X	X
PC.8 CR.1 CR.1g	X	X	X	X
PC.8 CR.1 CR.1h	X	X	X	X
PC.8 CR.1 CR.1i	X	X	X	X
PC.8 CR.1 CR.1j	X	X	X	X
PC.8 CR.1 CR.1k	X	X	X	X
PC.8 CR.2	X	X	X	X
PC.8 CR.3	X	X	X	X
PC.8 CR.3 CR.3a	X	X	X	X
PC.8 CR.3 CR.3b	X	X	X	X
PC.8 CR.3 CR.3c	X	X	X	X
PC.8 CR.3 CR.3d	X	X	X	X
PC.8 CR.3 CR.3e	X	X	X	X
PC.8 CR.3 CR.3f	X	X	X	X
PC.8 CR.3 CR.3g	X	X	X	X
PC.8 CR.3 CR.3h	X	X	X	X
PC.8 CR.3 CR.3i	If applicable	If applicable	If applicable	X
PC.9	Transfer Agreement			
PC.9 CR.1	X	X	X	X
PC.9 CR.1 CR.1a	X	X	X	X
PC.9 CR.1 CR.1b	X	X	X	X
PC.9 CR.1 CR.1c	X	X	X	X
PC.9 CR.1 CR.1d	X	X	X	X
PC.9 CR.1 CR.1e	X	X	X	X
PC.9 CR.2	X	X	X	X
PC.10	Plan of Care			
PC.10 CR.1	X	X	X	X
PC.10 CR.2	X	X	X	X
PC.10 CR.3	X	X	X	X
PC.10 CR.4	X	X	X	X
PC.10 CR.5	X	X	X	X
PC.10 CR.5 CR.5a	X	X	X	X
PC.10 CR.5 CR.5a CR.5a(1)	X	X	X	X
PC.10 CR.5 CR.5a CR.5a(2)	X	X	X	X
PC.10 CR.5 CR.5a CR.5a(3)	X	X	X	X
PC.10 CR.5 CR.5a CR.5a(4)	X	X	X	X

DNV Integrated Stroke Center Certification Program Requirements

STANDARD NUMBER	ASR	PSC	PSC+	CSC
PC.10 CR.5 CR.5a CR.5a(5)	X	X	X	X
PC.10 CR.5 CR.5a CR.5a(6)	X	X	X	X
PC.10 CR.6	X	X	X	X
PC.11	Medication Management			
PC.11 CR.1	X	X	X	X
PC.11 CR.2	X	X	X	X
PC.11 CR.3	X	X	X	X
PC.11 CR.4	X	X	X	X
PC.11 CR.4 CR.4a	X	X	X	X
PC.11 CR.4 CR.4b	X	X	X	X
PC.11 CR.5	X	X	X	X
PC.11 CR.6	X	X	X	X
PC.11 CR.6 CR.6a	X	X	X	X
PC.11 CR.6 CR.6b	X	X	X	X
PC.11 CR.6 CR.6c	X	X	X	X
PC.12	Diagnostic Tests			
PC.12 CR.1	X	X	X	X
PC.12 CR.2	X	X	X	X
PC.12 CR.2 CR.2a	X	X	X	X
PC.12 CR.3	X	X	X	X
PC.12 CR.3 CR.3a	X	X	X	X
PC.12 CR.3 CR.3b	X	X	X	X
PC.12 CR.4	X	X	X	X
PC.12 CR.4 CR.4a	X	X	X	X
PC.12 CR.5	X	X	X	X
PC.12 CR.6				X
PC.12 CR.7				X
PC.12 CR.8				X
PC.12 CR.9				X
PC.12 CR.10				X
PC.13	Rehabilitation Services			
PC.13 CR.1	X	X	X	X
PC.13 CR.2	X	X	X	X
PC.13 CR.2 CR.2a	X	X	X	X
PC.13 CR.2 CR.2b	X	X	X	X
PC.13 CR.2 CR.2c	X	X	X	X
PC.13 CR.2 CR.2d	X	X	X	X
PC.13 CR.3	X	X	X	X
PC.13 CR.4	X	X	X	X
PC.14	Patient/Family/Community Education			
PC.14 CR.1	X	X	X	X
PC.14 CR.1 CR.1a	X	X	X	X
PC.14 CR.1 CR.1b	X	X	X	X

DNV Integrated Stroke Center Certification Program Requirements

STANDARD NUMBER	ASR	PSC	PSC+	CSC
PC.14 CR.1 CR.1c	X	X	X	X
PC.14 CR.2		X	X	X
PC.14 CR.2 CR.2a	X			
PC.14 CR.3	X	X	X	X
PC.14 CR.3 CR.3a	X	X	X	X
PC.14 CR.3 CR.3b	X	X	X	X
PC.14 CR.3 CR.3c	X	X	X	X
PC.14 CR.3 CR.3d	X	X	X	X
PC.14 CR.4	X	X	X	X

PATIENT CARE SERVICES (PC)

PC.1 Planning for Service Delivery

- CR.1 The stroke center, with other disciplines, shall plan and develop the processes needed for stroke center service delivery. Planning of the stroke center service delivery shall be consistent with the certification requirements of the processes of the stroke center program. In planning stroke center services delivery, the stroke center shall determine the following, as appropriate and include a written plan or description of:
- CR.1a Quality objectives and requirements for the stroke center
 - CR.1b The need to establish processes, documents and resources specific to the stroke center
 - CR.1c Required verification, validation, monitoring, and measurement, specific to the stroke center
 - CR.1d Records needed to provide evidence that the processes meet requirements

PC.2 Review of Initial Eligibility

CSC – PC.2 CR.1

- CR.1 The applicant stroke center shall review the requirements related to the desired level of stroke center certification program. This review shall be conducted prior to the stroke center's commitment to provide services to patients and shall ensure that:
- CR.1a The stroke center has the ability to meet the defined requirements
 - CR.1b Designated stroke program medical director (See [PM.1 CR.2](#) [MS.2 CR.1](#))
 - CR.1c Designated registered nurse stroke coordinator (See [PM.1 CR.3](#))
 - CR.1d Written agreement/plan with primary EMS agency
 - CR.1e Acute Stroke Team is available 24/7/365
 - CR.1f Neurology coverage plans (includes teleneurology coverage)
 - CR.1g Neurosurgical Services coverage plan (See [MS.4](#))
 - CR.1h Written protocol for stroke identification, triage, diagnosis, and treatment
 - CR.1i Provide care for patients with a diagnosis of transient ischemic attack (TIA) on site at the applicant organization. Provide volume for the past 24 months from date of application for initial eligibility (No minimum volume requirement)
 - CR.1j The CSC shall have administered IV thrombolytics to at least 25 eligible patients over the past 24 months from the date of application for initial eligibility

Interpretive Guideline

This condition may be applied to the eligible patient numbers in addition to the administration of thrombolytics at the CSC site. IV thrombolytics that were given at another hospital based on telestroke recommendation by the CSC and transferred to the CSC when the patient is stable for continued care may be counted in the eligibility number of thrombolytic administrations.

- CR.1k The CSC must have performed at least 10 endovascular or surgical procedures for aneurysm /arteriovenous malformation treatment on site at the applicant organization over the past 24 months from the date of application for initial eligibility. May include treatment of both ruptured and unruptured cerebral aneurysms. Example: coiling, clipping, liquid embolization, flow diverters, all types of aneurysmal embolization (may combine numbers of procedures)
- CR.1l The CSC shall have performed at least 15 thrombectomies onsite at the applicant organization over the past 24 months from the date of application for initial eligibility
- CR.1m Provide care to at least 20 or more patients with a diagnosis of subarachnoid hemorrhage (non-traumatic and aneurysmal only) on site at the applicant organization over past 24 months from the date of application for initial eligibility.
- CR.1n Provide care for patients with a diagnosis of spontaneous intracerebral hemorrhage on site at the applicant organization. Provide volume for the past 24 months from date of application for initial eligibility. (No minimum volume requirement)

DNV Integrated Stroke Center Certification Program Requirements

- CR.1o The stroke center shall provide the full spectrum of treatment capabilities and options including but not limited to: IV thrombolytics, AVM treatment, thrombectomies, endovascular embolization, clipping, coiling, stenting of carotids, etc.
- CR.1p The applicant stroke center shall have collected, analyzed and presented to the stroke quality committee, at least one quarter of required metrics data for initial eligibility. Includes teleneurology coverage
- CR.1q Records (i.e., meeting minutes) of the results of reviews and actions shall be maintained
- CR.1r Transfer agreement / Memorandum of Understanding (See [PC.9 CR.1](#))
- CR.1s The applicant stroke center shall participate in Institutional Review Board (IRB) reviewed stroke research

PSC + - PC.2 CR.2

- CR.2 The applicant stroke center shall review the requirements related to the desired level of stroke center certification program. This review shall be conducted prior to the stroke center's commitment to provide services to patients and shall ensure that:
- CR.2a The stroke center has the ability to meet the defined requirements
 - CR.2b Designated stroke program medical director (See [PM.1 CR.2](#) , [MS.2 CR.2](#))
 - CR.2c Designated registered nurse stroke coordinator (See [PM.1 CR.3](#))
 - CR.2d Written agreement/plan with primary EMS agency
 - CR.2e Acute Stroke Team is available 24/7/365
 - CR.2f Neurology coverage plans (includes teleneurology coverage)
 - CR.2g Neurosurgical Services coverage plan (See [MS.4](#))
 - CR.2h Written protocol for stroke identification, triage, diagnosis and treatment
 - CR.2i Provide care for patients with a diagnosis of transient ischemic attack on site at the applicant organization. Provide volume for the past 24 months from date of application for initial eligibility (No minimum volume requirement)
 - CR.2j The PSC+ shall have administered IV thrombolytics to at least 10 eligible patients over the past 24 months from date of application. The following condition may be applied to the eligible patient numbers in addition to the administration of thrombolytics at the PSC+ site

Interpretive Guidelines

IV thrombolytics that were given at another hospital based on telestroke recommendation by the PSC+ and transferred to the PSC+ when the patient is stable for continued care may be counted in the eligibility number of thrombolytic administrations.

- CR.2k If the PSC+ performs endovascular or surgical procedures for aneurysm /arteriovenous malformation treatment on site at the applicant organization provide the number over the past 24 months from the date of application (No minimum volume requirement)
- CR.2l The PSC+ shall have performed at least 15 thrombectomies onsite at the applicant organization over the past 24 months from the date of application for initial eligibility
- CR.2m A protocol for provision of care to patients with a diagnosis of subarachnoid hemorrhage on site at the applicant organization. (non-traumatic and aneurysmal only) until transfer or admission, for initial eligibility (No minimum volume requirement)
- CR.2n A protocol for provision of care to patients with a diagnosis of spontaneous intracerebral hemorrhage on site at the applicant organization, until transfer or admission, for initial eligibility. (No minimum volume requirement)
- CR.2o The PSC+ shall provide the full spectrum treatment capabilities for IV thrombolytics and thrombectomies. If other stroke related procedures are performed, such as AVM treatment, endovascular embolization, clipping, coiling, etc., the PSC+ will be expected to ensure the treatment capabilities and competencies required
- CR.2p The applicant stroke center shall have collected, analyzed and presented to the stroke quality committee, at least one quarter of required metrics data for initial eligibility

CR.2q Records (i.e., meeting minutes) of the results of reviews and actions shall be maintained

CR.2r Transfer agreement / Memorandum of Understanding (See [PC.9 CR.1](#))

PSC – PC.2 CR.3

CR.3 The applicant stroke center shall review the requirements related to the desired level of stroke center certification program. This review shall be conducted prior to the stroke center's commitment to provide services to patients and shall ensure that:

CR.3a The stroke center has the ability to meet the defined requirements

CR.3b Designated stroke program medical director (See [PM.1 CR.2](#) [MS.2 CR.2](#))

CR.3c Designated registered nurse stroke coordinator (See [PM.1 CR.3](#))

CR.3d Written agreement/plan with primary EMS agency

CR.3e Acute Stroke Team is available 24/7/365

CR.3f Neurology coverage plans (includes teleneurology coverage)

CR.3g Neurosurgical Services coverage plan (See [MS.4](#))

CR.3h Written protocol for stroke identification, triage, diagnosis and treatment

CR.3i Provide care for patients with a diagnosis of transient ischemic attack on site at the applicant organization. Provide volume for the past 24 months from date of application for initial eligibility (No minimum volume requirement)

CR.3j The PSC shall have administered IV thrombolytics to at least 10 eligible patients over the past 24 months from the date of application on site at the applicant organization for initial eligibility

CR.3k If the PSC performs endovascular or surgical procedures for aneurysm /arteriovenous malformation treatment on site at the applicant organization provide the number over the past 24 months from the date of application (No minimum volume requirement)

CR.3l Reserved

CR.3m A protocol for provision of care to patients with a diagnosis of subarachnoid hemorrhage on site at the applicant organization. (non-traumatic and aneurysmal only) until transfer or admission, for initial eligibility (No minimum volume requirement)

CR.3n A protocol for provision of care to patients with a diagnosis of spontaneous intracerebral hemorrhage on site at the applicant organization, until transfer or admission, for initial eligibility (No minimum volume requirement)

CR.3o The PSC shall provide the full spectrum treatment capabilities for IV thrombolytics. If other stroke related procedures are performed, such as AVM treatment, endovascular embolization, clipping, coiling, etc., the PSC will be expected to ensure the treatment capabilities and competencies required

CR.3p The applicant stroke center shall have collected, analyzed and presented to the stroke quality committee, at least one quarter of required metrics data for initial eligibility.

CR.3q Records (i.e., meeting minutes) of the results of reviews and actions shall be maintained

CR.3r Transfer agreement / Memorandum of Understanding (See [PC.9 CR.1](#))

ASR – PC.2 CR.4

CR.4 The applicant stroke center shall review the requirements related to the desired level of stroke center certification program. This review shall be conducted prior to the stroke center's commitment to provide services to patients and shall ensure that:

CR.4a The stroke center has the ability to meet the defined requirements

CR.4b Designated stroke program medical director (See [PM.1 CR.2](#) [MS.2 CR.4](#))

CR.4c Designated registered nurse stroke coordinator (See [PM.1 CR.3](#))

CR.4d Written agreement/plan with primary EMS agency

CR.4e Acute Stroke Team is available 24 hours a day, 365 days a year

DNV Integrated Stroke Center Certification Program Requirements

- CR.4f Neurology coverage plans (includes teleneurology coverage)
- CR.4g Neurosurgical Services coverage plan (See [MS.4](#))
- CR.4h Written protocol for stroke identification, triage, diagnosis and treatment
- CR.4i Provide care for patients with a diagnosis of transient ischemic attack (TIA) on site at the applicant organization. Provide volume for the past 24 months from date of application for initial eligibility (No minimum volume requirement)
- CR.4j The ASR stroke center shall have administered IV thrombolytics to at least 5 eligible patients over the past 24 months from the date of application on site at the applicant organization for initial eligibility
- CR.4k Protocol for provision of care for patients with endovascular or surgical procedures for aneurysm /arteriovenous malformation treatment, if applicable
- CR.4l Reserved
- CR.4m A protocol for provision of care to patients with a diagnosis of subarachnoid hemorrhage (non-traumatic and aneurysmal only) until transfer or admission, for initial eligibility (No minimum volume requirement)
- CR.4n A protocol for provision of care to patients with a diagnosis of spontaneous intracerebral hemorrhage on site at the applicant organization, until transfer or admission, for initial eligibility (No minimum volume requirement)
- CR.4o The ASR shall provide laboratory services, CT/neuro-diagnostics, medical stabilization, IV thrombolytics, follow-up treatment (if applicable) and any other interventions that the center is capable of and equipped to provide (24/7/365). If other stroke related procedures are performed, such as AVM treatment, endovascular embolization, clipping, coiling, etc., the ASR will be expected to ensure the treatment capabilities and competencies required
- CR.4p The applicant stroke center shall have collected, analyzed and presented to the stroke quality committee, at least one quarter of required metrics data for initial eligibility
- CR.4q Records (i.e., meeting minutes) of the results of reviews and actions shall be maintained
- CR.4r Transfer agreement / Memorandum of Understanding (See [PC.9 CR.1](#))

PC.3 Recertification Process and Requirements

CSC – PC.3 CR.1

- CR.1 The stroke center shall submit a recertification attestation and update within 60 days before the scheduled recertification survey.
 - CR.1a Thrombectomies - at least 25 thrombectomies required over the past 24 months for recertification
 - CR.1b Endovascular or surgical procedures for aneurysm /arteriovenous malformation treatment on site at the organization - at least 20 required over the past 24 months for recertification
 - CR.1c Provide care for 20 or more patients over the past 24 months with a diagnosis of subarachnoid hemorrhage (non-traumatic and aneurysmal only) on site at the organization for recertification
 - CR.1d Provide care for patients with a diagnosis of spontaneous intracerebral hemorrhage, on site at the recertifying organization. Provide volume for the past 24 months (No minimum volume requirement)
 - CR.1e Administered IV thrombolytics to at least 25 eligible patients over the past 24 months on site at the organization for recertification
 - CR.1f Provide care for patients with a diagnosis of transient ischemic attack (TIA), on site at the recertifying organization. Provide volume for the past 24 months for recertification (No minimum volume requirement)
 - CR.1g Changes to leadership such as registered nurse stroke coordinator, stroke medical director, primary contact, practitioners, etc.
 - CR.1h New Services offered, or previous services discontinued
 - CR.1i Interruption of services lasting over a two-week time period
 - CR.1j Change of hospital name or healthcare system/affiliation
 - CR.1k Institutional Review Board (IRB) reviewed stroke research. Research may be current and/or closed

PSC+ - PC.3 CR.2

CR.2 The stroke center shall submit a recertification attestation and update within 60 days before the scheduled recertification survey.

- CR.2a Thrombectomies - at least 25 thrombectomies required over 24 months for recertification
- CR.2b Reserve
- CR.2c Provide care for patients with a diagnosis of subarachnoid hemorrhage (non-traumatic and aneurysmal only), on site at the recertifying organization. Provide volume for the past 24 months (No minimum volume requirement)
- CR.2d Provide care for patients with a diagnosis of spontaneous intracerebral hemorrhage, on site at the recertifying organization. Provide volume for the past 24 months (No minimum volume requirement)
- CR.2e Administered IV thrombolytics to at least 25 eligible patients over the past 24 months on site at the organization for recertification
- CR.2f Provide care for patients with a diagnosis of transient ischemic attack, on site at the recertifying organization. Provide volume for the past 24 months for recertification (No minimum volume requirement)
- CR.2g Changes to leadership such as nurse stroke coordinator, stroke medical director, primary contact, practitioners
- CR.2h New Services offered, or previous services discontinued
- CR.2i Interruption of services lasting over a two-week time period
- CR.2j Change of hospital name or healthcare system/affiliate

PSC – PC.3 CR.3

CR.3 The stroke center shall submit a recertification attestation and update within 60 days before the scheduled recertification survey.

- CR.3a Reserve
- CR.3b Reserve
- CR.3c Provide care for patients with a diagnosis of subarachnoid hemorrhage (non-traumatic and aneurysmal only), on site at the recertifying organization. Provide volume for the past 24 months (No minimum volume requirement)
- CR.3d Provide care for patients with a diagnosis of spontaneous intracerebral hemorrhage, on site at the recertifying organization. Provide volume for the past 24 months (No minimum volume requirement)
- CR.3e Administered IV thrombolytics to at least 20 eligible patients over the past 24 months, on site at the organization for recertification
- CR.3f Provide care for patients with a diagnosis of transient ischemic attack (TIA), on site at the recertifying organization. Provide volume for the past 24 months for recertification (No minimum volume requirement)
- CR.3g Changes to leadership such as nurse stroke coordinator, stroke medical director, primary contact, practitioners
- CR.3h New Services offered, or previous services discontinued
- CR.1i Interruption of services lasting over a two-week time period
- CR.3j Change of hospital name or healthcare system/affiliation

ASR – PC.3 CR.4

- CR.4 The stroke center shall submit a recertification attestation and update within 60 days before the scheduled recertification survey.
- CR.4a Reserve
 - CR.4b Reserve
 - CR.4c Provide care for patients with a diagnosis of subarachnoid hemorrhage (non-traumatic and aneurysmal only), on site at the recertifying organization. Provide volume for the past 24 months (No minimum volume requirement)
 - CR.4d Provide care for patients with a diagnosis of spontaneous intracerebral hemorrhage, on site at the recertifying organization. Provide volume for the past 24 months (No minimum volume requirement)
 - CR.4e Administered IV thrombolytics to at least 5 eligible patients over the past 24 months on site at the organization for recertification
 - CR.4f Provide care for patients with a diagnosis of transient ischemic attack (TIA), on site at the recertifying organization. Provide volume for the past 24 months for recertification (No minimum volume requirement)
 - CR.4g Changes to leadership such as registered nurse stroke coordinator, stroke program medical director, primary contact, practitioners, etc.
 - CR.4h New Services offered, or previous services discontinued
 - CR.4i Interruption of services lasting over a two-week time period
 - CR.4j Change of hospital name or healthcare system/affiliation

PC.4 Emergency Department

- CR.1 The stroke center is responsible for developing and maintaining pathways, protocols and processes to rapidly identify, evaluate and treat potential stroke patients.
- CR.2 Emergency department practitioners and staff can demonstrate knowledge and understanding of the stroke protocol in place, including effective communication with EMS personnel, notification of the stroke team and initiation of the stroke protocol concurrent with the ED evaluation and management.
- CR.3 The emergency department practitioners and staff demonstrate knowledge in the delivery of acute therapies that can improve a patient's outcome with a variety of strokes, when indicated, including, but not limited to:
- Intravenous thrombolytics
 - [EVD Management](#)
 - Management of relevant comorbidities
 - Reversal of coagulopathies
 - Control and reduction of elevated intracranial pressure
 - Management of complications
 - Control of seizures
 - Blood pressure management
 - Oxygenation management
 - [Temperature management](#)
- CR.4 Documentation supports (that):
- CR.4a The patient has been assessed, and treatment decisions have been made within 45 minutes of the arrival to the emergency department
 - CR.4b Performance of all assessments are timed and recorded
 - CR.4c The patient has passed a dysphagia screen before receiving any oral medications, food or fluids
 - CR.4d Blood glucose levels are assessed before IV thrombolytic eligibility is determined
 - CR.4e The acute stroke patient has been assessed with the NIH Stroke Scale by a certified/qualified nurse or physician member of the Acute Stroke Team. (See [QM.9 CR.1 Metric 1](#))
 - CR.4f RESERVE

DNV Integrated Stroke Center Certification Program Requirements

CR.4g The assessment and treatment of signs and symptoms of blood pressure and neurological deterioration during and post IV thrombolytic therapy per current AHA/ASA guidelines are as follows:

Thrombolytic Monitoring Requirements	Pre-Bolus	Tenecteplase Post-Bolus	During Alteplase Infusion	Post Alteplase Infusion
Neurological assessment	No more than 15 minutes before bolus	Every 15 minutes for two hours	Every 15 minutes during the one-hour infusion	Every 15 minutes for the first hour after infusion
		Every 30 minutes for next 6 hours		Every 30 minutes for next 6 hours
		Hourly from eighth hour post bolus until 24 hours after bolus		Hourly from eighth post infusion hour until 24 hours after infusion
Vital Signs	No more than 15 minutes before bolus	Every 15 minutes for two hours	Every 15 minutes during the one-hour infusion	Every 15 minutes for the first 1 hour after infusion
		Every 30 minutes for the next 6 hours		Every 30 minutes for the next 6 hours
		Hourly from eighth hour post bolus hour until 24 hours after bolus		Hourly from eighth post infusion hour until 24 hours after infusion

CR.4h Recognition, assessment, and management of complications of acute stroke and treatments (vital signs, neuro status, angioedema etc.) and the process for notification of deterioration to medical staff and others.

CR.4i In the event an eligible patient with ischemic stroke does not receive IV thrombolytic therapy, documentation will support the rationale.

CR.5 All patients who arrive within 24 hours of onset of stroke symptom recognition, are assessed for endovascular treatment options whether receiving IV thrombolytic therapy or not a candidate for IV thrombolytic therapy. Documentation must be present as to the decision by the treating physician.

CR.6 There are specified timeframes addressed within the stroke protocol related to the initial assessment, treatment, and management as applicable to the emergency department (See [QM.7 CR.2](#))

CR.7 Maintain a current and complete call schedule (including back up) with contact information of the physicians on staff and/or available for the stroke center.

CR.8 The Emergency Department/Stroke Program will maintain a log that includes:

CR.8a Documentation of patient arrival, stroke alert call initiation, response times, patient diagnoses, treatments, outcomes, and dispositions will be kept and used for quality data review.

CR.8b The stroke center must maintain a log of times it notifies EMS that it is on diversion/bypass and unable to provide services for stroke patients in accordance with local policies and procedures.

CR.8c The stroke center must maintain a log documenting when a referral stroke center was not able to provide the medically identified appropriate level of stroke care.

Interpretive Guideline: *It is expected that the stroke center will track in-house stroke alerts to ensure that the defined processes of the stroke protocol are followed. For patients with an in-house stroke, the time of arrival should be the time that the deficit was first discovered.*

PC.5 Emergency Medical Services

CR.1 The hospital collaborates with emergency medical services (EMS) providers to make certain of the following:

CR.1a The program has a relationship with EMS providers that include notification when a patient with a suspected stroke is being transported to the hospital to activate the stroke alert and has a process to give feedback on patient outcomes. (Refer to applicable state limitations on notification in transit).

CR.1b The program has access to treatment protocols utilized by EMS providers in response to patients reporting symptoms of stroke.

DNV Integrated Stroke Center Certification Program Requirements

- CR.1c The program has stroke patient priority destination and/or interfacility transfer protocols utilized by EMS providers that address the transport of stroke patients, in accordance with law and regulation.
- CR.1d The program works collaboratively with EMS to establish that personnel have specific training in the use of at least one accepted field assessment tool such as the Cincinnati Pre-hospital Stroke Scale or other accepted tool.
- CR.1e The program and EMS will outline circumstances and communication protocols for which the stroke center would be on diversion and not able to accept patients.
- CR.1f The program works collaboratively with EMS to establish that personnel have annual training in stroke diagnosis and treatment. This EMS training may be co-sponsored with other healthcare facilities in the community.

Interpretive Guideline:

The Emergency Medical Service (EMS) plays a key role with the timely recognition, treatment, transfer, and outcomes of patients with acute stroke. The stroke center has established a strong relationship with the community EMS. Interagency collaboration with development and review of policies/procedures and education is strongly encouraged.

PC.6 Telemedicine/Telestroke

- CR.1 The organization must have a written description of telemedicine technologies available on site at the stroke center, if utilized.
- CR. 2 The telemedicine link or neurology consult shall be available within 20 minutes of being called.

Interpretive Guideline:

This may be a range of technologies from a telephone call consultation to remote visual interactive physical exam with real time viewing of the patient and/or their neuroimaging studies.

PC.7 Acute Stroke Team

- CR.1 The organization must have a designated acute stroke team (AST).
 - CR.1a All members of the stroke team shall have current job descriptions available that contain the experience, educational and performance expectations for their role on the stroke team.

Interpretive Guideline:

This team may be divided into two main functions. One main function is the stroke code team members who respond to a stroke code, either through the emergency department and/or in-house stroke alerts. Another function of the stroke team would be the interdisciplinary members who work together to facilitate the adherence to stroke program policies, procedures, protocols and access to care for patients. The AST job description may be written as an addendum, in a program narrative and/or in program specific competencies.

- CR.1b Annual/periodic performance evaluations shall include performance of stroke related duties, activities and fulfillment of education requirements.
- CR.1c The stroke center shall define the qualifications, roles, and responsibilities required of qualified practitioners, professionals, and other personnel assigned to the stroke teams through plans and policies.
- CR.1d The stroke teams will be comprised of personnel that may be employed, contracted or otherwise, available to the stroke center as applicable to the clinical services provided to encompass the following areas of expertise:
 - Neurologist or physicians with expertise in cerebrovascular disease
 - Neurosurgeon, board certified or eligible
 - Interventionalists with expertise in performing mechanical thrombectomies
 - Surgeons with expertise in treating intracranial and extracranial disease
 - Advanced Practice Provider
 - Registered Nurse Stroke Coordinator
 - Stroke Quality Representative
 - Emergency Department personnel
 - Emergency Medical Services representative (EMS)
 - Mobile Stroke Unit personnel, if applicable

DNV Integrated Stroke Center Certification Program Requirements

- Nursing staff trained in the care of acute stroke patients
- Diagnostic Radiologists
- Radiology CT and MRI Technologists
- [Respiratory Therapists](#)
- Rehabilitation therapists with expertise in treatment of acute stroke patients
- Rapid response designated [team](#) members
- Case manager or social worker
- Other qualified professionals with expertise defined by the medical staff and stroke center team, as indicated

Interpretive Guideline:

The stroke program should include practitioners who are appropriate to the scope of service provided.

CR.2 The stroke code team is available and on call 24/7/365.

CR.2a The stroke code team shall respond to stroke alerts in the emergency department. They may also respond to inpatient stroke alerts as designated. The rapid response team (if applicable) may respond to inpatient stroke alerts, if designated.

PC.8 Protocols

CR.1 The stroke center shall develop stroke protocols (pathways), based on current evidence-based practice for the treatment of emergent and ongoing care for acute stroke patients. This will be shared with the emergency department, EMS providers, and ICU and/or stroke unit for the care of acute stroke patients. Protocols and/or pathways are to be reviewed and updated, as needed at least annually, by the medical staff and stroke program. There shall be written protocols for emergent and ongoing patient care including but not limited to:

CR.1a TIA

CR.1b ischemic stroke

CR.1c hemorrhagic stroke (ICH and SAH)

CR.1d EVD placement and management

CR.1e telemedicine/telestroke consultation

CR.1f IV thrombolytic administration and post monitoring and management

CR.1g dysphagia screening

CR.1h transfer (both receiving to the stroke center and/or out to another stroke center (See [PC.9](#))

CR.1i in-house stroke alert

CR.1j post-operative/post endovascular procedure monitoring and management

CR.1k recognition and treatment of angioedema and other adverse conditions

CR.2 The response process shall include an early implementation of stroke protocol (pathway) and notification to the acute stroke team upon entry to the ED or prior upon notification from EMS personnel.

CR.3 The stroke protocols (pathways) will include standardized order sets for the diagnosis, evaluation and management of the acute stroke patient following current AHA guidelines that address:

CR.3a vital signs and neurological assessment frequency

CR.3b blood pressure management parameters

CR.3c blood glucose control

CR.3d temperature regulation parameters

CR.3e oxygenation management parameters [greater than or equal to 95%](#)

CR.3f blood work (including point of care)

CR.3g brain imaging

CR.3h thrombolytic/endovascular therapy inclusion and exclusion criteria

CR.3i ICP monitoring and management parameters, if applicable

PC.9 Transfer Agreement

The stroke center has evidence to support that coverage for essential stroke related services is in place or arrangements (transfer agreements) have been made with another facility that provides these services.

- CR.1 The stroke center shall have a written transfer protocol and a transfer agreement or a memorandum of understanding (MOU) with at least one facility capable of providing timely essential stroke related services in the event that a stroke center cannot provide services within two hours, 24/7/365. The transfer agreement will include:
- CR.1a emergency contact information for the acute stroke/receiving team at the authorized accepting transfer facility is available 24/7/365
 - CR.1b the ability to transfer the patient 24/7/365 and the ability of the receiving facility to accept the patient 24/7/365
 - CR.1c the ability to affect a transfer in a timely manner, as appropriate, for patient needs. Target timeframe for transfer is less than or equal to 2 hours and must be identified in the transfer agreement for essential stroke related services
 - CR.1d clinical criteria for transfer and the process for obtaining consultation for transfer decisions
 - CR.1e patient monitoring personnel required during transfer, dependent on patient's condition and related to the treatment required
- CR.2 There is a written document/transfer agreement with a transportation vendor that covers ground ambulance and if utilized, air ambulance transfer.

PC.10 Plan of Care

- CR.1 Nursing staff, [along with other disciplines](#), shall develop an [evidence-based](#) plan of care for the admitted stroke patient which will include identified individual needs for the patient based on their condition and the family's needs. Documentation of interdisciplinary findings shall be included in the plan of care, as appropriate.
- CR.2 Nursing staff will initiate a plan of care [upon admission, for each patient per hospital policy](#). An ongoing plan of care will be maintained that reflects the input of other disciplines, as appropriate. Documentation will provide evidence of interdisciplinary findings, protocols, and plans.

Interpretive Guideline

Nursing care for stroke patients involves assessing neurological function, monitoring vital signs, and identifying and/or preventing complications. Considerations for the individual patient's condition could include but not limited to:

- *pain assessment and management*
- *cardiac monitoring, as indicated/ordered*
- *fluid intake/Fluid management*
- *potential complications specific to treatment*
- *bleeding with thrombolytic therapy (IV sites, urine, gums, skin, emesis, etc.) or invasive procedures*
- *angioedema*
- *nutrition/hydration*

- CR.3 The plan of care will include relevant co-morbidities, as indicated.
- CR.4 The plan of care is updated at each phase of care and as patients' conditions change.
- CR.5 Patient and family members (or identified significant others) are involved in the planning of care, including discharge planning.

CR.5a Patient/family stroke education as indicated.

- CR.5a(1) stroke etiology
- CR.5a(2) general stroke risk factors
- CR.5a(3) individual/modifiable risk factors
- CR.5a(4) performed procedures
- CR.5a(5) medications
- CR.5a(6) therapies

CR.6 The plan of care will include initial discharge planning for continuing care and treatment based on needs, condition and prognosis of the patient.

Interpretive Guideline:

The plan of care may be demonstrated in many forms such as: included in established interdisciplinary protocols, a separate document or standardized format within nursing/admission notes.

PC.11 Medication Management

CR.1 There shall be a pharmacy service that meets the needs of the patients. Medications will be administered in accordance with accepted professional principles.

CR.2 All medications shall be administered by or under the supervision of nursing or other qualified personnel in accordance with applicable state and federal laws. All drugs and biologicals shall be administered only upon the orders of the practitioner responsible for the care of the patient in accordance with approved medical staff policies and procedures, approved protocols and accepted standards of practice.

CR.3 All compounding, packaging, and dispensing of medication shall be under the supervision of a pharmacist.

CR.4 The medical staff and/or pharmaceutical oversight group shall select and maintain a list (formulary) of medications to be available. The formulary shall be available to all appropriate staff at all times.

CR.4a The formulary will include IV thrombolytic therapy medications for treatment of ischemic stroke.

CR.4b There shall be policies/protocols in place to ensure that IV thrombolytic therapy for treatment of stroke is being used in accordance with established guidelines for administration.

CR.5 Emergency department practitioners shall have access to qualified personnel for consultation regarding the use of IV thrombolytic therapy.

CR.6 Emergency department practitioners can demonstrate safe and effective use of thrombolytics.

CR.6a Monitoring protocols for identification of post thrombolytic physiological/neurological status.
(See [PC.4 CR.4g](#))

CR.6b Monitor for recognition and treatment of angioedema and other adverse conditions.

CR.6c Transfer safety with medication administration/dosing – example: when IV alteplase infusion will continue during transfer - the time will be verified for the estimated time of completion.

PC.12 Diagnostic Tests

CR.1 Diagnostic services must be available 24/7/365 to complete and interpret initial tests within 45 minutes of being ordered.

Interpretive Guideline:

Documentation shall include completed diagnostic studies including complete blood count, chemistry, coagulation studies, troponin, as ordered, and when indicated, an ECG, chest x-ray, pregnancy test, etc., but should not delay initiation of IV thrombolytics. Point-of-care testing may be performed in the emergency department, according to the stroke center's policy. Blood draws and/or glucose testing performed by EMS prior to arrival may be accepted, in accordance with the policy of the stroke center and EMS services.

CR.2 Non-contrast computed tomography (CT) must be available 24/7/365. A radiology technologist trained in CT techniques must be available in-house, 24/7/365.

CR.2a Computed tomography angiography (CTA) These services shall be made available 24/7/365.

CR.3 Basic magnetic resonance imaging (MRI) must be available, when needed 24/7/365. An MRI technologist may be on call and available (but not required in house) within these parameters:

CR.3a If using MRI for acute treatment decision rather than a CT, the same time frame as written for CT applies and must be available in house.

CR.3b For all other purposes the hospital can make its own determination of timeframe.

CR.4 Documentation shall include completed and interpreted CT/MRI exams within 45 minutes for patients who are eligible for thrombolytics.

CR.4a The brain imaging study shall be interpreted by a physician or privileged provider with expertise in reading CT/MRI studies.

CR.5 Magnetic Resonance Angiography (MRA). These services shall be made available when needed 24/7/365.

Interpretive Guideline:

If a PSC or an ASR does not have MRI/MRA, transfer to a facility that provides MRI/MRA is permitted as the plan.

CSC - Additional Requirements

CR.6 Catheter Angiography (CA) available 24/7/365.

CR.7 Transcranial Doppler (TCD) shall be available.

CR.8 Transthoracic (TTE) Echocardiography shall be available.

CR.9 Transesophageal Echocardiography (TEE) shall be available.

CR.10 Computed Tomography Perfusion (CTP) available 24/7/365.

PC.13 Rehabilitation Services

CR.1 The stroke center provides physical therapy, occupational therapy and speech-language pathology services. Applicable only if the stroke center admits patients other than for hospice or end of life care.

CR.2 The stroke center shall require physical, occupational and speech therapists to be readily available 7 days per week by consultation for patient assessment and therapy during the patient hospitalization. Consults and assessments will be completed, when possible, within 24 hours of admission or when feasible once the patient is medically stable.

CR.2a There shall be documentation in the medical record of attempts to perform a patient assessment. If any assessment is not performed within 24 hours of admission, there must be documentation of attempt, patient refusal or order to not assess due to patient condition.

CR.2b If the stroke center does not have inpatient rehabilitation services available to meet the individual patient's needs, there shall be a documented plan in place to provide identified rehabilitation services on site by nearby programs or individuals offering this service. Documentation of referrals shall be in the medical record.

CR.2c The rehabilitation services department shall have a written treatment plan that is in accordance with orders from practitioners who are authorized by the medical staff to order rehabilitation services. The orders, treatment plan and results, notes, and other related documentation shall be maintained in the patient's medical record.

CR.2d There shall be a speech-language pathologist (SLP) available on site or on call to evaluate the stroke patient for dysphagia within 24 hours of admission if patient has been made NPO and/or failed an initial swallow screen. Scored at [QM.7 CR.4c](#)

CR.3 There shall be rehabilitation performance measures to evaluate patient outcomes, functional status, and potential discharge needs and the percentage of stroke patients who receive the appropriate level of rehabilitation services in the system. (Applies only if stroke patients are admitted for more than end of life/comfort measures.) Patients transferred out directly from the Emergency Department are excluded from this measure. Scored at [QM. 7 CR.4.](#)

CR.4 Therapy shall provide patients and family/caregivers with education and information to improve the understanding of stroke rehabilitation management in the acute care setting. (Education and/or materials need to be individualized to preferred learning methods)

Interpretive Guideline:

Rehabilitation Services as defined by the medical staff and the stroke center, and consistent with state and federal law, shall be performed by competent physical therapists, physical therapy assistants, occupational therapists, occupational therapy assistants and speech- language pathologists. Rehabilitation staff shall have experience in the treatment of stroke patients.

Rehabilitation services should be implemented as soon as possible. Mobilization of the stroke patient and resumption of self-care activities should occur as soon as medically feasible.

Nurse case managers and/or social workers must have adequate knowledge regarding stroke care, care coordination, levels of rehabilitation and community resources in their geographic regions.

PC.14 Patient/Family/Community Education

CR.1 The stroke center will ensure that it provides for the involvement of patients and/or family members in:

CR.1a making decisions about the plan of care goals during hospitalization

CR.1b discussing and planning for lifestyle changes to manage disease/condition (See [PC.10 CR.5](#))

CR.1c discussing and planning for post hospital care and needs, including possible placement

CR.2 Two community stroke education programs/events shall be offered per year and shall stress knowledge in the community about the causes, signs and symptoms of stroke as well as emerging stroke prevention strategies.

ASR – CR.2a

CR.2a One community stroke education programs/events shall be offered per year and shall stress knowledge in the community about the causes, signs and symptoms of stroke as well as emerging stroke prevention strategies.

CR.3 Community stroke education programs/events are designed to be delivered through various means to address:

CR.3a risk factors, signs, symptoms of stroke

CR.3b general prevention efforts that target modifiable risk factors, such as smoking, obesity, diabetes, etc.

CR.3c management of hypertension, lipid levels, atrial fibrillation, and medication adherence

CR.3d other relevant topics as identified by the stroke center

CR.4 The stroke center shall evaluate the community outreach initiatives by measuring the knowledge in the community about the causes, signs and symptoms of stroke, as well as emerging stroke prevention strategies. (Scored at [QM.7 CR.5](#))

Medical Staff Requirement Grid

Required Standards depend not only on certification level, but also on scope of service

STANDARD NUMBER	ASR	PSC	PSC+	CSC
MS.1	Credentialing and Privileging			
MS.1 CR.1	X	X	X	X
MS.1 CR.2	X	X	X	X
MS.1 CR.3	X	X	X	X
MS.1 CR.4	X	X	X	X
MS.1 CR.4 CR.4a	X	X	X	X
MS.2	Stroke Program Medical Director			
MS.2 CR.1				X
MS.2 CR.2			X	
MS.2 CR.3		X		
MS.2 CR.4	X			
MS.2 CR.5	X	X	X	X
MS.2 CR.6	X	X	X	X
MS.2 CR.7	X	X	X	X
MS.2 CR.7 CR.7a	X	X	X	X
MS.3	Medical Management and Coverage			
MS.3 CR.1	X	X	X	X
MS.3 CR.2	X	X	X	X
MS.3 CR.2 CR.2a	X	X	X	X
MS.3 CR.3	X	X	X	X
MS.3 CR.4	X	X	X	X
MS.3 CR.4 CR.4a	X	X	X	X
MS.3 CR.5	X	X	X	X
MS.4	Neurosurgical Services Coverage			
MS.4 CR.1	X	X	X	X
MS.4 CR.1 CR.1a	X	X	X	X
MS.4 CR.2	X	X	X	X
MS.4 CR.3	X	X	X	X
MS.4 CR.3 CR.3a	X	X	X	X
MS.4 CR.3 CR.3b	X	X	X	X
MS.4 CR.4	X	X	X	
MS.4 CR.4 CR.4a	X	X	X	
MS.4 CR.4 CR.4b	X	X	X	
MS.4 CR.5	X	X	X	X
MS.5	ICU / Critical Care Management and Coverage			
MS.5 CR.1	If provided	X	X	X
MS.5 CR.1 CR.1a	If provided	X	X	X
MS.5 CR.2	If provided	X	X	X
MS.5 CR.2 CR.2a	If provided	X	X	X
MS.5 CR.2 CR.2b	If provided	X	X	X
MS.5 CR.2 CR.2c	If provided	X	X	X

DNV Integrated Stroke Center Certification Program Requirements

STANDARD NUMBER	ASR	PSC	PSC+	CSC
MS.6	Interventional / Neuroendovascular Services and Coverage			
MS.6 CR.1	If provided	If provided	X	X
MS.6 CR.2	If provided	If provided	X	X
MS.6 CR.2 CR.2a	If provided	If provided	X	X
MS.6 CR.3	If provided	If provided	X	X
MS.6 CR.4	If provided	If provided	X	X
MS.6 CR.5	If provided	If provided	X	X
MS.7	Stroke Telemedicine Services			
MS.7 CR.1	X	X	X	X
MS.7 CR.1 CR.1a	X	X	X	X
MS.7 CR.2	X	X	X	X

MEDICAL STAFF (MS)

MS.1 Credentialing and Privileging

- CR.1 The governing body shall appoint members of the medical staff and approve clinical privileges after considering the recommendations of the members of the medical staff and ensure that the medical staff is accountable to the governing body for the quality of care provided to patients.
- CR.2 All individuals who are permitted by the organization and by state law to provide patient care services independently in the organization shall have delineated clinical privileges.
- CR.3 There shall be a provision in the medical staff bylaws for a mechanism to ensure that all individuals with clinical privileges provide services only within the scope of privileges granted.
- CR.4 The medical staff are required to develop and use criteria to review individual practitioner performance when granting and maintaining clinical privileges. [Volume and frequency to be determined by the medical staff.](#)
- CR.4a [There shall be a process for individual practitioners' peer reviewed cases that meet criteria set by the medical staff and host hospital.](#)

MS.2 Stroke Program Medical Director

The medical director for the stroke program must have training and expertise in cerebrovascular disease.

CSC – MS.2 CR.1

- CR.1 The stroke program medical director :
- shall have training and expertise in cerebrovascular disease to provide administrative leadership and clinical guidance
 - shall be a board-certified neurologist, neurosurgeon or neurointerventional radiologist who has completed a stroke fellowship, neurointerventional radiology fellowship or vascular neurosurgery fellowship or has equivalent experience
 - shall be a physician who diagnoses and treats greater than or equal to 50 patients with cerebrovascular disease, annually
 - shall be a physician with greater than or equal to 8 stroke education hours each year in areas directly related to cerebrovascular disease.
 - shall meet other criteria agreed on by the medical staff and the [host hospital](#) governing body or other criteria as determined by the local health care system

PSC+ - MS.2 CR.2

- CR.2 The stroke program medical director:
- shall have training and expertise in cerebrovascular disease to provide administrative leadership and clinical guidance
 - shall be board-certified neurologist, neurosurgeon or neurointerventional radiologist who has completed a stroke fellowship, neurointerventional radiology fellowship or vascular neurosurgery fellowship or has equivalent experience
 - shall be a physician who diagnoses and treats greater than or equal to 50 patients with cerebrovascular disease, annually
 - shall be a physician with greater than or equal to 8 stroke education hours each year in areas directly related to cerebrovascular disease
 - shall meet other criteria agreed on by the medical staff and the [host hospital](#) governing body or other criteria as determined by the local health care system

PSC – MS.2 CR.3

- CR.3 The stroke program medical director:
- shall have training and expertise in cerebrovascular disease to provide administrative leadership and clinical guidance

- shall be a physician with greater than or equal to 8 stroke education hours each year in areas directly related to cerebrovascular disease
- shall meet other criteria agreed on by the medical staff and the [host hospital](#) governing body or other criteria as determined by the local health care system

Interpretive Guideline

The director does not have to be a neurologist or neurosurgeon but should have sufficient knowledge of cerebrovascular disease. The medical director for the stroke center does not need to be board certified in neurology. The medical director for the stroke center can be an Emergency Department physician.

ASR – MS.2 CR.4

CR.4 The stroke program medical director:

- shall have training and expertise in cerebrovascular disease to provide administrative leadership and clinical guidance
- shall be a physician with greater than or equal to 4 stroke education hours each year in areas directly related to cerebrovascular disease
- shall meet other criteria agreed on by the medical staff and the [host hospital](#) governing body or other criteria as determined by the local health care system

Interpretive Guideline

The director does not have to be a neurologist or neurosurgeon but should have sufficient knowledge of cerebrovascular disease. The medical director for the stroke center does not need to be board certified in neurology. The medical director for the stroke center can be an Emergency Department physician.

All – CSC, PSC+, PSC, ASR

CR.5 The stroke program medical director or designee shall be available (24/7/365) to provide leadership and manage medical, logistical, and administrative issues.

CR.6 The stroke program medical director shall be involved in the assessment of patients and provide consultative advice to other treating physicians.

CR.7 There shall be a written delineation of scope, coverage (including back up), authority and responsibilities of the stroke program medical director.

CR.7a If there is a co-program director identified, there shall be a written delineation of scope, coverage, authority and responsibilities of each co-director only if responsibilities differ.

MS.3 Medical Management and Coverage

CR.1 [The stroke center will identify a specific unit\(s\) and/or beds to which most stroke patients are admitted and criteria when this may vary.](#)

CR.2 The stroke program shall ensure that every patient is under the care of an admitting physician who may consult / delegate such care to other qualified health care professionals.

CR.2a The medical staff shall define the circumstances and criteria under which consultation or management by physician or other qualified licensed independent practitioner is required to address any co-morbidities of the patients under the care of the stroke program as required.

CR.3 The medical staff shall ensure that a Doctor of Medicine or Osteopathy with expertise in cerebrovascular disease is on duty or on call 24/7/365. [\(telemedicine coverage acceptable\)](#)

CR.4 [The medical staff shall determine on-call physician response times for consultations, emergent assessments \(telemedicine and onsite\), and procedures.](#)

CR.4a A neurologist shall be available to answer emergency calls per telephone/tele video within 20 minutes.

CR.5 Emergency Department physicians shall have 24-hour access to a consultation from a [physician experienced in the diagnosis, treatment and management of hemorrhagic and ischemic stroke](#), including treatment with and management of thrombolytic therapy in ischemic stroke.

MS.4 Neurosurgical Services Coverage

CR.1 Neurosurgical coverage is described in a written coverage plan that includes the types of practitioners and services provided.

CR.1a A current neurosurgical call schedule is available in the emergency department.

CR.2 One or more neurosurgeons shall be available 24/7/365 to ensure coverage for neurosurgical management/consultation

Interpretive Guideline:

For those programs that do not offer neurosurgical services, their plan may be defined as a transfer to an equivalent or higher level of care.

If the neurosurgeon is covering two services in the same facility or covering more than one hospital, there shall be a written plan (schedule) for back-up coverage for each service.

CR.3 If neurosurgical services are provided, the stroke center shall have a fully functioning operating room 24/7/365 and appropriate qualified neurosurgical and operating room staff within a maximum of two hours when determined to be needed for a patient.

CR.3a There is documentation for any event in which neurosurgical services were not available within 2 hours of identified need.

CR.3b If the stroke center determines a need to transfer patients for neurosurgical emergencies, there is a written protocol for rapid transfer.

CR.4 If neurosurgical services are not offered by the facility, transfer of patients to an equal or higher level of care must occur in less than or equal to 2 hours of ED arrival, or when medically stable (Door-in-Door out (DIDO))

CR.4a There is documentation by the transferring facility of any event in which neurosurgical services were not available at an identified receiving facility within 2 hours of determined patient need.

CR.4b If the stroke center does transfer patients for neurosurgical emergencies, there is a written protocol for rapid transfer.

CR.5 Written protocols for transfer shall include the process by which patients are accepted from outside facilities as well as transferred out to an equivalent level or higher level of care.

MS.5 ICU / Critical Care Management and Coverage

CR.1 The stroke center shall have physicians with training in critical care/neurocritical care medicine to manage patient care in the ICU or NICU for ischemic stroke, hemorrhagic stroke and/or related neurological cases. These providers shall have the following:

CR.1a board-certified or board eligible providers who have completed either a critical care fellowship or neuro critical care fellowship; and/or who meet the critical care management criteria set by the medical staff.

CR.2 Intensivists/Hospitalists/NPs/PAs that meet criteria set by the medical staff to provide critical/neurocritical care may provide coverage in the ICU.

CR.2a The medical staff shall determine on-call physician response times for consultations, emergent assessments (telemedicine and onsite), and procedures.

CR.2b Criteria for ICU coverage shall be set by medical staff and shall be in writing.

CR.2c There shall be a process for individual intensivists/hospitalists/NPs/PAs peer reviewed cases, meeting criteria set by the medical staff and host hospital. Volume and frequency to be determined by the medical staff.

MS.6 Interventional / Neuroendovascular Services and Coverage

CR.1 There shall be interventional radiologists, neurosurgeons and/or neurologists that meet criteria set by the medical staff, available 24/7/365 to provide approved interventional / neuroendovascular services onsite.

CR.2 Interventional / neuroendovascular coverage is described in a written coverage plan that includes the types of practitioners and services provided.

CR.2a A current interventional / neuroendovascular call schedule is available in the emergency department.

CR.3 One or more interventional / neuroendovascular practitioners shall be available 24/7/365 to ensure coverage for interventional / neuroendovascular management/consultation

CR.4 If interventional / neuroendovascular services are provided, the stroke center shall have a fully functioning interventional suite 24/7/365 and appropriate qualified interventional / neuroendovascular practitioners and interventional radiology team available onsite within a specific time as determined by the medical staff.

CR.5 All perioperative complications of revascularization and microvascular procedures shall be tracked.

(See [Metric 18 CR.18](#))

Interpretive Guideline:

For those programs that offer approved interventional / neuroendovascular services, may include but are not limited to: thrombectomies, aneurysms treatment and repair, intracranial/extracranial angioplasty (examples: carotid artery stents, intracranial stents, balloons, liquid embolic agents) This would include PSCs and ASRs if these services are provided.

Those programs that do not offer interventional / neuroendovascular services; their coverage plan may be defined as a transfer to an equivalent or higher level of care.

MS.7 Stroke Telemedicine Services

CR. 1 There shall be stroke telemedicine providers with expertise in treating cerebrovascular disease that meet criteria set by the medical staff, available 24/7/365, to provide stroke telemedicine services for the host hospital, if utilized.

CR.1a Stroke telemedicine providers shall have privileges at the host hospital for services provided.

(Examples: consultation, diagnosis, treatment, medical management orders)

CR.2 There shall be documentation of review of individual stroke telemedicine providers' cases meeting criteria set by the stroke program, if utilized. Volume of cases and frequency of review to be determined by the stroke program.

Anesthesia Services Requirement Grid

All standards required for all levels of Stroke Programs (ASR, PSC, PSC+, CSC)

STANDARD NUMBER	ASR	PSC	PSC+	CSC
All standards	X	X	X	X

ANESTHESIA SERVICES (AS)

AS.1 Organization

Anesthesia services, including Deep and Moderate Sedation, shall be provided in an organized manner, and function under the direction of a qualified Doctor of Medicine or Osteopathy. The anesthesia service is responsible for all anesthesia services provided throughout the hospital. Areas where anesthesia services are furnished may include (but are not limited to):

- operating room suites, both inpatient and outpatient
- radiology department
- emergency department
- interventional Radiology (IR)
- intensive Care Unit (ICU)

CR.1 Anesthesia shall only be administered by the following:

CR.1a A qualified anesthesiologist or a Doctor of Medicine or a Doctor of Osteopathy, or Nurse Anesthetist.

CR.1b The medical staff, together with anesthesia services, will define (in writing) the criteria and qualifications for those physicians and practitioners who have privileges for administering anesthesia/sedation in accordance with hospital policy, state and federal laws and acceptable standards of practice.

CR.1c The criteria shall include, at a minimum, any required certification and/or documented proficiencies in airway management.

Interpretive Guideline:

Board Certified Emergency Room physicians are exempt from any required certification and/or documented proficiencies in airway management per ACEP, ABEM, and AOBEM, unless the medical staff and/or host hospital requires it.

CR.2 The medical staff, together with anesthesia services, will determine appropriate qualifications for a Licensed Independent Practitioner (LIP), other than an anesthesiologist, to provide anesthesia services including deep and moderate sedation.

CR.2a Non-anesthesiologists providing anesthesia services will demonstrate proficiency in anesthesia protocols and in the administration of anesthetic medications.

CR.2b Non-anesthesiologists providing anesthesia services will demonstrate proficiency in rescue capability.

CR.2c The medical staff must ensure that procedures are in place to rescue patients whose level of sedation becomes deeper than initially intended, for example, patients who inadvertently enter a state of deep sedation/analgesia when moderate sedation was intended. All personnel assisting in a procedure carried out under moderate sedation or higher must have current documented proficiency commensurate with their role.

CR.2d RNs will have documented current ACLS or similar documented proficiency unless [host hospital](#) has exempted them due to anesthesiology being present in these cases. Technicians/technologists, such as CT techs, IR techs will have documented current BLS.

AS.2 Anesthesia Services

CR.1 Anesthesia services shall be appropriate to the scope of the services offered.

CR.2 The stroke center will follow the [host hospital](#)'s criteria as well as local, state and federal laws and requirements and acceptable standards of care regarding pre-anesthesia screening and assessment and post anesthesia follow-up.

CR.3 The stroke center will assure that the anesthesiology department is notified of cases where complications involving sedation/anesthesia occurred and/or rescue medications were required to be used. The anesthesiology department will be responsible for review and any actions or recommendations, if indicated.

Nursing Services Requirement Grid

All standards required for all levels of Stroke Programs (ASR, PSC, PSC+, CSC)

STANDARD NUMBER	ASR	PSC	PSC+	CSC
All Standards	X	X	X	X

NURSING SERVICES (NS)

NS.1 Nursing Service

CR.1 The stroke center must have a well-organized nursing service with a plan of administrative authority and delineation of responsibilities for delivery of patient care for patients under the stroke center.

CR.2 There shall be 24-hour nursing services, and a registered nurse must supervise and evaluate the nursing care for each stroke center patient. A registered nurse shall be on duty at all times.

CR.2a A registered nurse shall make any decisions regarding delegation of nursing care to other nursing staff, based on individual patient need and staff qualifications.

CR.2b There shall be adequate numbers of licensed registered nurses, licensed practical nurses, supervisors, and other staff to provide nursing care to all patients of the stroke center as needed. A registered nurse must be immediately available for the bedside care of every patient, as required by state and federal law.

CR.2b (1) The nurse-to-patient ratio in the stroke unit/dedicated beds for care of stroke patients shall be 1:3 or 1:4. This may be modified accordingly based on both volume and acuity of patients.

Interpretive Guidelines:

As staffing patterns are usually 1:2 in ICUs, the above number does not denote that a higher ratio should apply in ICU.

CR.3 The stroke center nurses' competency-based education will include, but not be limited to, **care provided appropriate to the scope of service:**

CR.3a knowledge of the organizations stroke protocols, order sets and/or care maps

CR.3b nursing care of patients with ischemic stroke and hemorrhagic stroke (ICH, SAH)

CR.3c certification and/or qualification in NIHSS or equivalent standard neurologic assessments and Glasgow Coma Scale

CR.3d nursing care of patients during and post thrombolytic therapy

CR.3e blood pressure management

CR.3f management of intubated/ventilated patients

CR.3g management of post thrombectomy and other invasive/surgical patients

CR.3h treatment of increased intracranial pressure

CR.3i nursing assessment and management of the function of ventriculostomy and external ventricular monitoring and drainage apparatus

CR.3j be familiar and involved with ongoing research projects (if applicable)

Interpretive Guideline:

Nurses' competency-based education can be met by attendance at in-service sessions, participation in regional or national courses, and other modalities, as established by the stroke center staff and the host hospital. Competency based education shall be based on the scope of service. All competencies listed may not apply to all levels of certification.

CR.4 Nursing staff not assigned to the stroke program shall receive initial orientation and annual education, training and direction for identifying a stroke and accessing the stroke team as well as basic emergency care of acute stroke patients. (See [Education Table SM.2 CR.4](#))

CR.5 Non-employee licensed nurses ([agency/travel nurses](#)) who are working in the stroke program must adhere to the policies and procedures of the program. The stroke program must assess competency in the care of the patient diagnosed with stroke and provide stroke program orientation.

Staffing Management Requirement Grid

All standards required for all levels of Stroke Programs (ASR, PSC, PSC+, CSC)

STANDARD NUMBER	ASR	PSC	PSC+	CSC
All Standards	X	X	X	X

STAFFING MANAGEMENT (SM)

SM.1 Personnel

Stroke center personnel shall be competent based on the requirements for appropriate education, training, skills and experience.

CR.1 The stroke center shall have a policy and practice for outlining and verifying that each staff member must possess a valid and current license or certification as required by the stroke center and state and federal law.

SM.2 Orientation, Training and Competence

The stroke center shall:

CR.1 Determine the necessary competencies for personnel in the stroke center.

CR.2 Have documented evidence that demonstrates initial orientation, competency and required ongoing education for individuals who primarily are assigned to the care of acute stroke patients.

CR.3 Where applicable, provide training or take other actions to achieve the necessary competence.

CR.4 At least annually, provide continuing education or other equivalent educational activities to staff members and providers as appropriate to their level of responsibility. (See Annual Stroke Education and Training Table below.)

SM.2 CR.4 Annual Stroke Education and Training Table

Interpretive Guideline:

One grid cannot completely capture all the positions in all the hospitals that may have some responsibility for stroke patients. These are minimum requirements for the individual education hours. The program may designate more hours of required education depending on the classification of positions per the organization. If the organization requires more hours than the DNV stated minimum required, you will be surveyed to your stated requirements. We expect that if your organization has a title or a position that is not on this grid, you will refer to the grid and find the area that most closely matches the position you are trying to find. Determine and be able to justify your criteria for the number of hours you have chosen for those positions.

Position	Annual Hours	Notes
Stroke Core Team* Stroke Medical Director Nurse Stroke Coordinator	8 PSC, PSC+, CSC stroke education hours 4 ASR stroke education hours	<u>Stroke Advanced Practice Providers May include:</u> Nurse Practitioner Stroke-certified nurse Masters prepared clinical nurse specialist Physician Assistant *Stroke Advanced Practice Provider not required on Core Team for ASR, PSC and while not required, desirable for PSC+ and required for CSC
Stroke Quality Representative	4 ASR, PSC, PSC+, CSC stroke education hours 1 If non-clinical stroke education hours	The Stroke Quality Representative is a required member of the Stroke Core Team. If the Quality Representative is also the Nurse Stroke Coordinator, then the 8 hours of annual stroke education applies. If the Quality Representative is non-clinical, they are required to have 1 hour. *May include others as identified by stroke program leadership
Acute Stroke Team (AST)	8 stroke education hours	This education requirement is for <u>direct care</u> members of the AST who respond to Stroke Codes/Alerts. The organization can delineate education requirements for other members of the Stroke Team (i.e., Social Service, Dietician, etc.).

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Position	Annual Hours	Notes
Rapid Response Team (RRT)	8 stroke education hours Stroke Alert Protocol	If rapid response teams answer in-house stroke alerts, <u>at least one member</u> of the rapid response team must meet the education requirement of the AST and be included on the stroke committee. All Rapid Response Team members will have training on the stroke alert protocol, identification of stroke and use of hospital required stroke identification tools (i.e., NIHSS)
Neuro-Interventionalist Neuro-Interventional Radiologists Neuroendovascular Surgeons Neurosurgeons Neurologists Neuro-Intensivists Stroke Telemedicine Providers ED Physicians Hospitalists Intensivists Stroke Advance Practice Providers	3 hours of stroke specific education per year.	Any practitioner that is not specified in this grid and works with stroke patients needs to be included in this category. Applies only to these practitioners who provide their specialty services to the stroke center. (i.e., a hospital may have 20 neurosurgeons but only 2 provide services to the stroke program) Medical staff might require further neuro specific training (i.e., ENLS or equivalent.) depending on an evaluation by the medical staff of individual practitioners' training and experience. This applies only to those hospitalists, intensivists and advanced practice providers that care for stroke patients. <u>*Stroke Advanced Practice Providers May include:</u> Nurse Practitioner Stroke-certified nurse Masters prepared clinical nurse specialist Physician Assistant
Emergency Department Nurse Manager ICU Nurse Manager Stroke Unit Nurse Manager Step Down Unit Nurse Manager Neuro-Dedicated-ICU RNs Stroke Unit Step Down Mixed Population ICU RNs	6* stroke education hours	Clinical supervision may be assigned to a stroke resource nurse (i.e., nurse educator) rather than a nurse manager. Requirement is for those nurses who work with stroke patients, not necessarily all neuro patients *ASR—6 hours apply only if stroke patients are admitted for <u>more than</u> end of life/comfort measures *ASR 2 hours <u>applies only</u> if patients are admitted for end of life/comfort measures * Applicable to any unit <u>routinely</u> admitting stroke patients/not just an <u>occasional</u> admit

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Position	Annual Hours	Notes
ED nurses PACU Nurses* Interventional Nurses Interventional Techs	4 stroke education hours	Nurses/techs that work in these settings with stroke patients *(PACU only if utilized for stroke patients-post thrombectomy/clipping/coiling/other interventions)
Pharmacists Pharmacy Technicians	2 stroke education hours	For Pharmacy—All who are involved with the stroke program and/or preparation of thrombolytics.
Rehabilitation Therapists	2* education hours	For rehab—All who work with or are assigned to stroke patients (OT, PT, SLP) *ASR—applies only if stroke patients are admitted for <u>more than</u> end of life/comfort measures.
Nurses not assigned to stroke units such as Med Surg, Obstetrics, etc.	1 education hour	Shall include but not be limited to: Recognition of stroke signs and symptoms and policy/process for in-house stroke alert.
All other staff (clinical and non-clinical)	1 stroke recognition/awareness activity	FAST, BEFAST training (or equivalent) could be an option and would be acceptable.

CR.5 Maintain appropriate records of education, training, skills and experience.

Interpretive Guideline:

This annual requirement may be met in a variety of ways, including online continuing medical credits, attendance at grand rounds, regional and national meetings and various educational courses. Education should be specifically related to diagnosis / assessment and management of acute stroke / cerebrovascular disease (may be policy / competency driven).

The stroke center may determine which personnel are required to receive the minimum hours of education and training. It is at the discretion of the stroke center to exclude any personnel, with justification, when they are not specifically dedicated to the stroke center.

SM.3 Determining and Modifying Staffing

CR.1 The stroke center shall develop a method for determining and modifying staffing.

SM.4 Job Description

CR.1 All personnel, whether clinical or supportive, including contract staff, shall have available a current job description that contains the experience, educational and physical requirements, and performance expectations for that position, including annual stroke education.

Interpretive Guideline:

Stroke center specific requirements may be in an addendum to the job description, program narrative or in program specific competencies.

SM.5 Orientation

- CR.1 All personnel, whether clinical or supportive, including contract staff, shall receive an orientation to specific job duties and responsibilities, and their work environment, as required by hospital policy, state and federal law. The stroke center shall determine orientation content that must take place prior to the individual functioning independently in their job.

SM.6 Staff Evaluations

- CR.1 The performance/competency evaluation shall contain indicators that will objectively measure the ability of staff to perform all job duties as outlined in the job description, hospital policies and any additional stroke program specific competencies.
- CR.2 The staff shall be evaluated initially and on an on-going basis.
- CR.3 The stroke center shall follow the [host hospital](#) requirement that each staff member, including contract staff, participate in continuing education as required by individual licensure/certification, professional association, law or regulation.

Patient Rights Requirement Grid

All standards required for all levels of Stroke Programs (ASR, PSC, PSC+, CSC)

STANDARD NUMBER	ASR	PSC	PSC+	CSC
All Standards	X	X	X	X

PATIENT RIGHTS (PR)

PR.1 Specific Rights

The stroke center shall protect and promote each patient's rights as required by the [host hospital](#) policies. The stroke center shall inform, whenever possible, each patient and/or legal representative (as allowed under state law) of the patient's rights in advance of providing or discontinuing care and allow the patient to exercise his or her rights accordingly. The written listing of these rights shall be provided to the patient and /or family and shall include policies and procedures that address the following:

- CR.1 patient and/or family participation and means for making informed decisions regarding their plan of care
- CR.2 information to the patient or family of patient and to involve the patient and family to make informed decisions regarding their planning for care and treatment, including the requesting and/or refusing treatment, their health status, not to be construed as a demand for the provision of treatment or services deemed medically unnecessary or inappropriate
- CR.3 personal privacy
- CR.4 provision of care in a safe setting
- CR.5 confidentiality of clinical records
- CR.6 procedure for submission of a written or verbal grievance (See [PR.5 Grievance Procedure](#))
- CR.7 pain Management

PR.2 Advance Directive

The stroke center must allow the patient to formulate advance directives and to have stroke center staff and practitioners comply with the advance directives in accordance and in participation with the [host hospital](#) policies as well as state and federal law, rules and regulations.

PR.3 Language and Communication

The stroke center shall communicate with the patient and/or legal representative in language or format that the patient and/or legal representative understand.

- CR.1 The stroke center, through the [host hospital](#) policy and practice, provides for competent individuals to interpret the patient's language for individuals who do not speak English or provide alternative communication aids for those who are deaf, blind, or otherwise impaired.

PR.4 Informed Consent

- CR.1 The stroke center shall obtain informed consent from each patient or authorized representative for the provision of medical care under the stroke center. The consent shall include an explanation of risks, benefits, and alternatives for procedures, diagnostic tests, and participation in activities related to the stroke center, as defined by the medical staff, state and federal law. Unless required by local practices, a signed informed consent document is not required.
- CR.2 If the patient lacks capacity and no patient representative can be found after a reasonable effort, then the physician may [proceed with acute stroke care \(i.e., medications/procedures\)](#) based on the principle of implied consent for emergency treatment.
 - CR.2a The physician shall document the patient's absence of decision-making capacity, which attempts to contact a patient representative were unsuccessful, and that there is an urgent medical need to proceed with treatment in the absence of consent.
 - CR.2b Regardless of whether written or verbal consent is obtained, physicians shall document the informed consent discussion in the medical record.
- CR.3 Informed consent for thrombectomies, CEAs, stroke related, or other surgical interventions shall follow the rules of the [host hospital](#), state and federal other applicable local laws.

PR.5 Grievance Procedure

The stroke center shall participate in and follow the [host hospital](#) formal grievance process and procedure for submission of a patient's written or verbal grievance.

Medical Records Requirement Grid

All standards required for all levels of Stroke Programs (ASR, PSC, PSC+, CSC)

STANDARD NUMBER	ASR	PSC	PSC+	CSC
All Standards	X	X	X	X

MEDICAL RECORDS (MR)

MR.1 Organization

- CR.1 Administrative responsibility for medical records shall rest with the medical record service of the [host hospital](#). This includes paper records, electronic medical records and any reports from other sources such as patient transfer documents.
- CR.2 The stroke center shall maintain the [host hospital](#)'s policies on an accurately recorded, promptly completed medical record for all patients in the organizations system.
- CR.3 The [host hospital](#) organization shall have a process for providing services for the completion, filing, and retrieval of medical records. The process for completion of the medical record must address timeframes.
- CR.4 Authenticity and security of all record entries shall be safeguarded.

MR.2 Confidentiality

- CR.1 Confidentiality of patient records shall be assured.
- CR.2 Individuals who are authorized by the patient to receive information from or copies of records shall follow processes designed to protect improper or inadvertent release of private information to unauthorized individuals.
- CR.3 The organization shall ensure that the medical record cannot be altered or accessed by unauthorized individuals.

MR.3 Record Content

- CR.1 The medical record shall contain information to:
 - CR.1a Justify treatment, admission and/or continued hospitalization
 - CR.1b Support the diagnosis; and,
 - CR.1c Describe the patient's progress and response to all medications and services provided.
- CR.2 All entries shall be:
 - CR.2a legible, complete, dated and timed
 - CR.2b authenticated by the person responsible for providing or evaluating the services provided, consistent with the [host hospital](#) and stroke center policy

Interpretive Guideline

Authentication may include written signatures, initials or electronic signature entry.

- CR.3 The stroke center shall follow the [host hospital](#) system requirements to identify the author of each entry into the medical record.
- CR.4 All orders must be dated, timed and authenticated promptly by the prescribing practitioner.
- CR.5 Telephone and verbal orders must be in accordance with state and federal law and authenticated by the practitioner, or a practitioner responsible for the care of the patient, within time frame required by the [host hospital](#) and/or state and federal law.

MR.4 Required Documentation

- CR.1 All records must document the following, as appropriate.
 - CR.1a Evidence of a physical examination, including a health history must be performed on all patients admitted for inpatient care and/or prior to surgery or procedure requiring anesthesia services, except in emergencies.
 - CR.1b Admitting diagnosis (if admitted),
 - CR.1c Results of all consultative evaluations of the patient and appropriate findings by clinical and other staff involved in the care of the patient,
 - CR.1d Documentation of complications, organization acquired infections, and unfavorable reactions to drugs and anesthesia,
 - CR.1e Properly executed informed written consent forms for procedures and treatments specified by the medical staff, or by state and federal law if applicable, signed by the patient or their authorized representative, (See [PR.4 for Informed Consent Policy](#))

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- CR.1f All practitioners' orders, nursing notes, assessments, reassessments, treatments, medication administration, radiology reports, laboratory reports, vital signs and any other information necessary to diagnose, treat or monitor the patient's condition.
- CR.2 Documentation indicating reason if an eligible ischemic stroke patient does not receive IV thrombolytic therapy.
- CR.3 Documentation indicating the assessments of all stroke patients, whether they received IV thrombolytic therapy or not, to determine the eligibility/recommendation for endovascular intervention.
- CR.4 Assessments, re-assessments, interventions and monitoring (i.e., post thrombolytics / post endovascular procedures) per protocol and/or hospital policy.
- CR.5 Discharge summary with outcome of hospitalization, disposition of case, and provisions for follow up care.

Physical Environment Requirements Grid

All standards required for all levels of Stroke Programs (ASR, PSC, PSC+, CSC)

STANDARD NUMBER	ASR	PSC	PSC+	CSC
All Standards	X	X	X	X

PHYSICAL ENVIRONMENT (PE)

PE.1 The stroke center shall participate in the facility and safety management systems for maintaining the physical environment in place under the operation of the [host hospital](#), including applicable National Fire Protection Association (NFPA) standards, applicable CMS Conditions of Participation and any additional accreditation organization (AO) requirements.

ADDENDUM A: 2025 DNV Metrics Measuring Processes And Quality

QM.9 Metrics For Measuring Quality Of Care

The certified stroke program shall ensure that it provides the following core quality metrics that are listed in Metrics for Measuring Quality of Care in Comprehensive Stroke Centers American Heart Association/American Stroke Association Recommendations: A Statement for Healthcare Professionals from the Detailed Follow-Up to Brain Attack Coalition Comprehensive Stroke Center Stroke 2011, 42:849-877.

Get With The Guidelines® list of the metrics, please [see Addendum B](#).

CR.1 Metric 1:

Percentage of all stroke [alert](#) patients who have a deficit at the time of the initial RN note, ED Physician or Neurology consultation note for whom an NIHSS score is documented.

Numerator:

Number of patients with suspected ischemic, [hemorrhagic](#) stroke or TIA with a deficit at the time of the initial [assessment](#) note (or neurological consultation note) for whom an NIHSS is documented.

Denominator:

All patients who have a suspected ischemic, [hemorrhagic](#) stroke or TIA.

CR. 4 Metric 4:

Time from arrival to the start of advanced (CTA, CTP, MRA, MRI) imaging workup for all patients who arrive within 24 hours of last known well.

No numerator/ denominator.

***Interpretive Guideline:** Advanced imaging includes, but not limited to, CTA/CTP, MRI/MRA. Patients should be excluded from this if there is a documented reason for not performing imaging quickly. For patients with an in-house stroke, the time of arrival should be the time that the deficit was first discovered.*

CR.6 Metric 6:

Median time from hospital arrival to the time of skin puncture to access the artery (e.g., brachial, carotid, femoral, radial) selected for endovascular treatment (EVT) of acute ischemic stroke.

No Numerator/Denominator

The start of treatment is defined here as the time of skin puncture to access the artery selected for endovascular treatment, (e.g., brachial, radial, femoral) or intra-arterial thrombolytic infusion, of acute ischemic stroke.

Metric 6a:

Median time from hospital arrival to the time of skin puncture to access the artery (e.g., brachial, carotid, femoral, radial) selected for endovascular treatment (EVT) of acute ischemic stroke in patients who are transferred from another hospital.

No numerator or denominator

Metric 6b:

Median time from hospital arrival to the time of skin puncture to access the artery (e.g., brachial, carotid, femoral, radial) selected for endovascular treatment (EVT) of acute ischemic stroke in patients who present directly to your hospital, OR mode of arrival not documented.

No numerator or denominator

CR.7 Metric 7:

Percentage of Ischemic stroke patients who develop a symptomatic intracranial hemorrhage within 36 hours after the onset of treatment with intra-venous (IV) or intra-arterial (IA) thrombolytic therapy, or mechanical endovascular reperfusion procedure.

Numerator:

Ischemic stroke patients who develop a symptomatic intracranial hemorrhage within 36 hours after the onset of treatment with IV thrombolytic therapy, or IA thrombolytic therapy, or mechanical endovascular reperfusion therapy.

Denominator:

Ischemic stroke patients treated with IV thrombolytic therapy only or IA thrombolytic therapy, or who undergo mechanical endovascular reperfusion therapy.

CR. 7a Metric 7a

Percentage of Ischemic stroke patients who develop a symptomatic intracranial within 36 hours after the onset of treatment with intra-venous (IV) thrombolytic therapy only.

Numerator:

Ischemic stroke patients who develop a symptomatic intracranial within 36 hours after the onset of treatment with IV thrombolytic therapy only.

Denominator:

Ischemic stroke patients treated with IV thrombolytic therapy only

CR. 7b Metric 7b

Percentage of Ischemic stroke patients who develop a symptomatic intracranial hemorrhage within 36 hours after the onset of treatment with IA thrombolytic therapy or mechanical endovascular reperfusion therapy.

Numerator:

Ischemic stroke patients who develop a symptomatic intracranial hemorrhage within 36 hours after the onset of treatment with IA thrombolytic therapy or mechanical endovascular reperfusion therapy

Denominator:

Ischemic stroke patients treated with IA thrombolytic therapy or mechanical endovascular reperfusion therapy

CR. 9 Metric 9:

Percentage of acute ischemic stroke patients who are treated with intravenous thrombolysis or who undergo endovascular recanalization procedure for whom there is documentation of a 90-day mRS score.

Numerator:

All patients with ischemic stroke acutely treated with intravenous thrombolysis or with an endovascular recanalization procedure who had an mRS performed approximately 90 days after the stroke, either in person or by telephone if it was not possible to perform in person.

Denominator:

All patients admitted with ischemic stroke acutely treated with intravenous thrombolysis or with an endovascular recanalization procedure.

Interpretive Guideline: *The mRS should be conducted by a trained person using a standardized interview. The mRS may be based on information obtained from the patient, family member or caregiver. The mRS should be performed within 75 to 105 days from discharge. If a patient has expired before discharge or within the 90 days leading up to the mRS assessment, the patient should be scored as a 6.*

CR.12 Metric 12:

Percentage of Subarachnoid hemorrhage (aSAH) and intracerebral hemorrhage (ICH) stroke patients for whom a severity measurement (i.e., Hunt and Hess Scale or World Federation of Neurological Surgeons Scale for SAH patients or ICH Score for ICH patients) is performed prior to surgical intervention and documented in the medical record; OR documented within 6 hours of arrival at the hospital emergency department for patients who do not undergo surgical intervention.

Numerator:

The number of aSAH patients for whom the Hunt and Hess scale or the World Federation of Neurological Surgeons Scale is documented and the number of ICH patients whom the ICH score and is documented in the medical record prior to surgical intervention; OR documented within 6 hours of hospital arrival for patients who do not undergo surgical intervention.

Denominator:

The sum of the number of aSAH patients and the number of ICH patients admitted for acute care. Patients admitted directly to "Comfort Care" or "Hospice" may be excluded.

Interpretive Guideline: For a patient to be counted in the numerator, the Hunt and Hess or the World Federation of Neurological Surgeons Scale for SAH patients and the ICH scores for the ICH patients should be documented in the initial neurological or neurosurgical admitting or consultation note or in a separate earlier note and should be evaluated before the start of any endovascular or surgical procedure. This combined number should be calculated as the-total metric, but separate numbers-should also be calculated for each severity score.

CR.12a Metric 12a:

Percentage of aSAH patients for whom a severity measurement is performed prior to surgical intervention and documented in the medical record; OR documented within 6 hours of hospital arrival for patients who do not undergo surgical intervention.

Numerator:

The-number of aSAH patients for whom the Hunt and Hess scale or the World Federation of Neurological Surgeons Scale is performed prior to surgical intervention and documented in the medical record; OR documented within 6 hours of hospital arrival for patients who do not undergo surgical intervention.

Denominator:

The sum of the number of aSAH patients that were admitted for acute care. Patients admitted directly to "Comfort Care" or "Hospice" may be excluded.

CR.12b Metric 12b:

Percentage of ICH stroke patients for whom a severity measurement is performed prior to surgical intervention and documented in the medical record; OR documented within 6 hours of hospital arrival for patients who do not undergo surgical intervention.

Numerator:

The number of ICH patients for whom the ICH score is performed prior to surgical intervention and documented in the medical record; OR documented within 6 hours of hospital arrival for patients who do not undergo surgical intervention.

Denominator:

The sum of the number of ICH patients that were admitted for acute care. Patients admitted directly to "Comfort Care" or "Hospice" may be excluded.

CR.15 Metric 15:

Percentage of patients with documented aneurysmal SAH for whom Nimodipine treatment is started within 24 hours of diagnosis and for whom such treatment is continued until 21 days after the hemorrhage or until discharge if they are discharged less than 21 days after the aSAH.

Numerator:

Patients with documented aneurysmal SAH treated with Nimodipine within 24 hours of diagnosis and who continue this treatment until 21 days after their hemorrhage, or until discharge if they are discharged less than 21 days after the aSAH, or until they develop a contraindication to Nimodipine.

Denominator:

All patients with a diagnosis of aneurysmal SAH.

Interpretive Guideline: Acceptable contraindications include documentation of intractable hypotension or allergy to Nimodipine. Patients whose dose of Nimodipine is reduced because of hypotension will be

considered to be in compliance with this metric. Patients who have a known contraindication to Nimodipine and are therefore not treated with it will also be considered to be in compliance with this metric.

CR.18 Metric 18:

Complication rates for aneurysm endovascular and/or surgical treatment

Numerator:

Patients undergoing endovascular and/or surgical treatment of a ruptured or un-ruptured aneurysm who have complications of death, stroke or bleeds within 24 hours of the procedure or any re-bleeding and/or second treatment for residual aneurysm within 24 hours of the procedure.

Denominator:

All patients undergoing endovascular and/or surgical treatment of a ruptured or un-ruptured cerebral aneurysm.

CR.18a Metric 18a

Numerator:

Patients with unruptured cerebral aneurysms undergoing endovascular treatment with complications.

Denominator:

All patients undergoing endovascular treatment of an unruptured cerebral aneurysm

CR.18b Metric 18b

Numerator:

Patients with a ruptured cerebral aneurysm undergoing endovascular treatment with complications

Denominator:

All patients undergoing endovascular treatment of a ruptured cerebral aneurysm

CR.18c Metric 18c

Numerator:

Patients with unruptured cerebral aneurysms undergoing surgical treatment with complications

Denominator:

All patients undergoing surgical treatment of an unruptured cerebral aneurysm

CR.18d Metric: 18d

Numerator:

Patients with ruptured cerebral aneurysms undergoing surgical treatment with complications

Denominator:

All patients undergoing surgical treatment of a ruptured cerebral aneurysm

CR.20 Metric 20:

Percentage of patients undergoing surgical or endovascular treatment of a hemorrhagic AVM who have another stroke or expire during the procedure or within 24 hours of the procedure.

Numerator:

Patients undergoing surgical or endovascular treatment of a hemorrhagic AVM who have another stroke or expire during the procedure or within 24 hours of the procedure.

Denominator:

All patients undergo surgical or endovascular treatment of an AVM.

CR.24 Metric 24:

Percentage of patients who have a diagnosis of ischemic or hemorrhagic stroke who undergo EVD and then develop ventriculitis.

Numerator:

All patients with ventriculitis after EVD, as defined above, and a diagnosis of ischemic or hemorrhagic stroke.

Denominator:

All patients who undergo ventriculostomy because of problems related to ischemic or hemorrhagic stroke.

Interpretive Guideline:

For this metric, ventriculitis is defined as the presence of positive cerebrospinal fluid cultures in a patient with EVD.

CR.27 Metric 27:

Percentage of acute ischemic stroke patients who receive mechanical endovascular reperfusion therapy who have post reperfusion grade of TICl 2b or higher.

Numerator:

Ischemic stroke patients with a post-treatment reperfusion grade of TICl 2b or higher.

Denominator:

All ischemic stroke patients treated with mechanical endovascular reperfusion therapy.

CR.28 Metric 28:

Percentage of ischemic stroke patients with a large vessel cerebral occlusion who receive mechanical endovascular reperfusion (MER) within 120 minutes of hospital arrival and achieve TICl 2b or higher at the end of treatment.

Numerator:

Ischemic stroke patient with large vessel occlusion who achieves TICl 2b or higher within 120 minutes of hospital arrival

Denominator:

All ischemic stroke patients treated with mechanical endovascular reperfusion therapy who achieve TICl 2b or higher.

CR.29 Metric 29:

Percentage of Ischemic stroke patients with a large vessel cerebral occlusion who receive mechanical endovascular reperfusion (MER) therapy and for whom the time from skin puncture to recanalization/reperfusion achieve TICl 2b or higher less than or equal to 60 minutes.

Numerator:

Ischemic stroke patients who achieve TICl 2b or higher, less than or equal to 60 minutes from the time of skin puncture.

Denominator:

Ischemic stroke patients treated with mechanical endovascular reperfusion therapy who achieve TICl 2b or higher.

DNV Layer Measures

ADDENDUM B: DNV Layer Measures for GWTG Users

The measures and the bundle listed below are provided to GWTG-Stroke sites that opt-in to the DNV Layer. These measures are developed and implemented by DNV according to DNV stroke center certification program requirements. Please direct any questions related to the abstraction of these measures or requirements to your GWTG registry representative. If you are using GWTG Stroke and are interested in adding the DNV layers to your registry, please reach out to your AHA representative.

- QM.7-CR.2a: Door to ED Provider within 10 minutes
- QM.7-CR.2b: Door to Stroke Team Arrival within 15 minutes
- QM.7-CR.2c: Door to CT Results Reported within 45 minutes
- QM.7-CR.2d: Lab Results Completed within 45 minutes of Initial Order
- QM.7-CR.2e: Telestroke Consultation Request to Connected Contact within 20 minutes
- QM.7-CR.2f45: Door to Needle within 45 minutes
- QM.7-CR.2f60: Door to Needle within 60 minutes
- QM.7-CR.2g: Transfer to Higher-Level Stroke Center within 2 Hours of ED Arrival
- QM.7-CR.3a: Venous Thromboembolism Prevention (VTE)
- QM.7-CR.3b: Discharged on Antithrombotic Therapy
- QM.7-CR.3c: Anticoagulation Therapy for Atrial Fibrillation
- QM.7-CR.3d: Thrombolytic Therapy
- QM.7-CR.3e: Antithrombotic Therapy by End of Day 2
- QM.7-CR.3f: Discharged on Statin Medication
- QM.7-CR.3g: Dysphagia Screen
- QM.7-CR.3h: Stroke Education (Patient and Family)
- QM.7-CR.3i: Assessed for Rehabilitation
- QM.7-CR.4a Assessment and Identification of Impairments within 24 Hours of Admission
- QM.7-CR.6a: Pre-Morbid mRS
- QM.7-CR.6b: Modified Rankin Score at Discharge
- QM.7-CR.7a: Interventional Mortality Rate by Procedure Type
- QM.9-CR.1: NIHSS Score Documented
- QM.9-CR.7: Thrombolytic and Endovascular Therapy Complications
- QM.9-CR.9: 90-Day mRS for IVT or EVT Patients
- QM.9-CR.12: Baseline Severity Measurement for Hemorrhagic Stroke Patients
- QM.9-CR.12a: Baseline Severity Score for SAH Patients
- QM.9-CR.12b: Baseline Severity Score for ICH Patients
- QM.9-CR.15: Nimodipine Treatment within 24 Hours and Continued
- MR.4-CR.2: Reasons for No IV Thrombolytic
- MR.4-CR.3: Endovascular Intervention for Eligible Patients with Ischemic Stroke

DNV Advanced Layer Measures

The measures and the bundle listed below are provided to GWTG-Stroke sites that opt-in to the DNV Advanced Layer. These measures are developed and implemented by DNV according to DNV stroke center certification program requirements. Please direct any questions related to the abstraction of these measures or requirements to your GWTG registry representative. If you are using GWTG Stroke and are interested in adding the DNV layers to your registry, please reach out to your AHA representative.

- QM.9-CR.6a: Median Time from Hospital Arrival to Skin Puncture – Transfer In
- QM.9-CR.6b: Median Time from Hospital Arrival to Skin Puncture – Direct Presenters or Mode of Arrival ND
- QM.9-CR.18: Complication Rates for Aneurysm Endovascular and/or Surgical Treatment
- QM.9-CR.18a: Complication Rates for Unruptured Brain Aneurysms Undergoing Endovascular Treatment
- QM.9-CR.18b: Complication Rates for Ruptured Brain Aneurysm Undergoing Endovascular Treatment
- QM.9-CR.18c: Complication Rates for Unruptured Brain Aneurysms Undergoing Surgical Treatment
- QM.9-CR.18d: Complication Rates for Ruptured Brain Aneurysms Undergoing Surgical Treatment
- QM.9-CR.20: Surgical or Endovascular Treatment of an AVM with Stroke or Death
- QM.9-CR.24: Ventriculitis from External Ventricular Drain (EVD)
- QM.9-CR.27: Rate of Substantial Reperfusion
- QM.9-CR.28: Door to Recanalization/Reperfusion (DTRp) within 120 minutes
- QM.9-CR.29: Skin Puncture to Recanalization / Reperfusion (DTRp) within 60 minutes

**ADDENDUM C:
DNV QM.7 / GWTG Crosswalk**

Required DNV QM.7 Metric	DNV Definition	Equivalent DNV Measure in GWTG	Measure Definition in GWTG
QM.7 CR.2	Hyperacute (all stroke code patients) are included in the collection of these specific performance measures involving the timeliness of the initiation of acute assessment and treatment		
QM.7 CR.2a	Door to ED physician/provider less than or equal to 10 minutes	QM.7-CR.2a	Door to ED Provider Within 10 Minutes <i>Percentage of stroke alert patients assessed by an Emergency Department provider within 10 minutes of hospital arrival</i>
QM.7 CR.2b	Door to stroke team in less than or equal to 15 minutes	QM.7-CR.2b	Door to Stroke Team Arrival Within 15 Minutes <i>Percentage of stroke alert patients who have Stroke Team arrival to the patient within 15 minutes of arriving to the hospital</i>
QM.7 CR.2c	Door to CT interpretation less than or equal to 45 minutes	QM.7-CR.2c	Door to CT Results Reported Within 45 Minutes <i>Percentage of stroke alert patients who have CT brain imaging reported within 45 minutes of hospital arrival</i>
QM.7 CR.2d	Order to lab results less than or equal to 45 minutes, if ordered	QM.7-CR.d	Lab Results Completed Within 45 Minutes of Initial Order <i>Percentage of stroke alert patients who have initial lab tests completed within 45 minutes of being ordered</i>
QM.7 CR.2e	Telestroke consultation request to connected contact within 20 minutes, if applicable	QM.7-CR.e	Telestroke Consultation Request to Connected Contact Within 20 Minutes <i>Percentage of stroke alert patients who have Telestroke response (connected contact) within 20 minutes of Telestroke consult request at this hospital</i>
QM.7 CR.2f	Achieving Door to Needle times (time of bolus) within 60 minutes in 75% or more of acute ischemic stroke patients treated with IV thrombolytics	QM.7-CR.2f 60	Door to Needle within 60 minutes <i>Percent of acute ischemic stroke patients receiving intravenous tissue plasminogen activator (thrombolytic) therapy during the hospital stay who have a time from hospital arrival to initiation of thrombolytic therapy administration (door-to-needle time) of 60 minutes or less</i>
QM.7 CR.2f	Achieving Door to Needle times (time of bolus) within 45 minutes in 50% or more of acute ischemic stroke patients treated with IV thrombolytics	QM.7-CR.2f 45	Door to Needle within 45 minutes. <i>Percent of acute ischemic stroke patients receiving intravenous thrombolytic therapy during the hospital stay who have a time from hospital arrival to initiation of thrombolytic therapy administration (door-to-needle time) of 45 minutes or less</i>
QM.7 CR.2g	Transfer of patients to an equal or higher level of care in less than or equal to 2 hours of ED arrival, or when medically stable (Door-in-Door out (DIDO))	QM.7-CR.2g	Transfer to a Higher-Level Stroke Center Within 2 Hours of ED Arrival <i>Stroke alert patients transferred to a higher-level stroke center within 2 hours of ED arrival, or when medically stable (Door-in-Door out (DIDO))</i>

DNV Integrated Stroke Center Certification Program Requirements

Required DNV QM.7 Metric	DNV Definition	Equivalent DNV Measure in GTWG	Measure Definition in GTWG
QM.7 CR.3a	Venous Thromboembolism Prevention (VTE)	QM.7-CR.3a	Venous Thromboembolism Prevention (VTE) <i>Percent of patients with ischemic stroke, hemorrhagic stroke, or stroke not otherwise specified who receive VTE prophylaxis the day of or the day after hospital admission</i>
QM.7 CR.3b	Discharged on Antithrombotic Therapy	QM.7-CR.3b	Discharged on Antithrombotic Therapy <i>Percent of patients with an ischemic stroke or TIA prescribed antithrombotic therapy at discharge</i>
QM.7 CR.3c	Anticoagulation Therapy for Atrial Fibrillation	QM.7-CR.3c	Anticoagulation Therapy for Atrial Fibrillation <i>Percent of patients with an ischemic stroke or TIA with atrial fibrillation/flutter discharged on anticoagulation therapy</i>
QM.7 CR.3d	Thrombolytic Therapy	QM.7-CR.3d	Thrombolytic Therapy <i>Percent of acute ischemic stroke patients who arrive at the hospital within 210 minutes (3.5hours) of time last known well and for whom IV thrombolytic was initiated at this hospital within 270 minutes (4.5 hours) of time last known well</i>
QM.7 CR.3e	Antithrombotic Therapy by end of day 2	QM.7-CR.3e	Antithrombotic Therapy by End of Day 2 <i>Percent of patients with ischemic stroke or TIA who receive antithrombotic therapy by the end of hospital day two</i>
QM.7 CR.3f	Discharged on statin medication High or moderate intensity statin per age recommendation	QM.7-CR.3f	Discharged on Statin Medication <i>Percentage of patients with ischemic stroke or TIA who are prescribed high-intensity statin therapy at discharge OR, if > 75 years of age, are prescribed at least moderate-intensity statin therapy at discharge</i>
QM.7 CR.3g	Dysphagia Screen	QM.7-CR.3g	Dysphagia Screen <i>Percent of stroke patients who undergo screening for dysphagia with an evidence-based bedside testing protocol approved by the hospital before being given any food, fluids, or medication by mouth.</i>
QM.7 CR.3h	Stroke Education (patient and family)	QM.7-CR.3h	Stroke Education (Patient and Family) <i>Percent of patients with Stroke or TIA or their caregivers who were given education and/or educational materials during the hospital stay addressing ALL of the following: personal risk factors for stroke, warning signs for stroke, activation of emergency medical system, need for follow-up after discharge, and medications prescribed.</i>
QM.7 CR.3i	Assessed for Rehabilitation	QM.7-CR.3i	Assessed for Rehabilitation <i>Percent of patients with Stroke who were assessed for rehabilitation services.</i>
QM.7 CR.4	Percentage of stroke patients who have evaluation for and identification of impairments within 24 hours of admission, or when feasible once medically stable.	Q.7-CR.4a	Assessment and Identification of Impairments within 24 Hours of Admission <i>Percentage of stroke patients who have received an evaluation or attempted for identification of impairments within 24 hours of admission, or when feasible once medically stable.</i>

DNV Integrated Stroke Center Certification Program Requirements

Required DNV QM.7 Metric	DNV Definition	Equivalent DNV Measure in GWTG	Measure Definition in GWTG
QM.7 CR.4a	Percentage of assessments completed on stroke patients and identification of impairments by the physical therapist within 24 hours of admission or when feasible once the patient is medically stable.	QM.7-CR.4a Group 3 Descriptor within this metric for PT	Physical Therapy assessment within 24 hours of admission or once medically feasible <i>Percentage of stroke patients who have evaluation for and identification of impairments within 24 hours of admission, or when feasible once medically stable</i>
QM.7 CR.4b	Percentage of assessments completed on stroke patients and identification of impairments by the occupational therapist within 24 hours of admission or when feasible once the patient is medically stable.	QM.7-CR.4a Group 2 Descriptor within this metric for OT	Occupational Therapy assessment within 24 <i>Percentage of stroke patients who have evaluation for and identification of impairments within 24 hours of admission, or when feasible once medically stable</i>
QM.7 CR.4c	Percentage of assessments within 24 hours of admission by speech therapists to evaluate a stroke patient for dysphagia if patient has been made NPO and/or failed an initial swallow screen	QM.7-CR.4a Group 4 Descriptor within this metric for SLP	Speech-Language Pathology assessment within 24 hours of admission or once medically feasible <i>Percentage of stroke patients who have evaluation for and identification of impairments within 24 hours of admission, or when feasible once medically stable</i>
QM.7 CR.5	There shall be community education performance measures, evaluating community outreach initiatives by measuring the knowledge in the community about the causes, signs and symptoms of stroke as well as emerging stroke prevention strategies	N/A	N/A
QM.7 CR.6	Functional status and discharge outcome measures		
QM.7 CR.6a	Percentage of patients that have a Pre-Morbid Modified Rankin Score by or at discharge. (Applies to all stroke patients who are admitted for more than end of life/comfort measures)	QM.7-CR.6a	Pre-Morbid mRS <i>Percentage of stroke patients who have Pre-Morbid Modified Rankin Score by or at discharge</i>
QM.7 CR.6b	Percentage of patients that have a Modified Rankin Score at time of discharge from the stroke center. (Applies to all stroke patients, including ischemic, hemorrhagic and TIA , who are admitted for more than end of life/comfort measures)	QM.7-CR.6b	Modified Rankin Score at Discharge <i>Percentage of stroke patients who have a Modified Rankin Score at time of discharge</i>

DNV Integrated Stroke Center Certification Program Requirements

Required DNV QM.7 Metric	DNV Definition	Equivalent DNV Measure in GWTG	Measure Definition in GWTG
QM.7 CR.7	The stroke center shall monitor all complication rates and overall outcomes associated with stroke related treatments		
QM.7 CR.7a	Rate of mortality for patients who have thrombolytic administration, aneurysm clipping, coiling, and other interventional procedures, shall be documented and reviewed	QM.7-CR.7a-1	Expired after IV Thrombolytic Therapy <i>Rate of mortality for patients who have IV thrombolytic administration</i>
QM.7 CR.7a	As above	QM.7-CR.7a-2	Expired after MER <i>Rate of mortality for patients who have mechanical endovascular therapy</i>
QM.7 CR.7a	As above	QM.7-CR.7a-3	Expired after Cerebral Aneurysm Repair with a Repair Approach of Surgical Clipping <i>Rate of mortality for patients who have aneurysm repair with surgical clipping</i>
QM.7 CR.7a	As above	QM.7-CR.7a-4	Expired after Cerebral Aneurysm Repair with a Repair Approach of Endovascular Coiling <i>Rate of mortality for patients who have aneurysm repair with endovascular coiling</i>
QM.7 CR.7a	As above	QM.7-CR.7a-5	Expired after Cerebral Aneurysm Repair with a Repair Approach of Flow Diverting Stenting <i>Rate of mortality for patients who have aneurysm repair with flow diverting stenting</i>
QM.7 CR.7a	As above	QM.7-CR.7a-6	Expired after Cerebral Aneurysm Repair with “Other” Repair Approach <i>Rate of mortality for patients who have aneurysm repair with other repair approaches</i>
QM.7 CR.7a	As above	QM.7-CR.7a-7	Expired after Surgical Treatment for ICH <i>Rate of mortality for patients who have surgical treatment for ICH</i>

DNV QM.9 / GWTG Crosswalk

Required DNV QM.9 Metric	DNV Definition	Equivalent DNV Measure in GWTG	Measure Definition in GWTG
QM.9 CR.1 Metric 1	Percentage of all stroke alert patients who have a deficit at the time of the initial RN note, ED Physician or Neurology consultation note for whom an NIHSS score is documented.	QM.9-CR.1	NIHSS Score Documented <i>Percentage of all stroke alert patients for whom an NIHSS score is documented in the initial assessment</i>
QM.9 CR.2 Metric 2 Retired	Now captured only at QM.7 CR.3d	QM.7-CR.3d	Thrombolytic Therapy <i>Percent of acute ischemic stroke patients who arrive at the hospital within 210 minutes (3.5 hours) of time last known-well and for whom IV thrombolytic was initiated at this hospital within 270 minutes (4.5 hours) of time last known well</i>
QM.9 CR.4 Metric 4	Median time from arrival to the start of advanced (CTA, CTP, MRA, MRI) imaging workup for all patients who arrive within 24 hours of last known well	Refer to GWTG- Stroke Patient List Report	Refer to Operation Reports > Get With The Guidelines® - Stroke Patient List Report > DNV Patient List to select data elements and time calculations in a patient list format for QM.9-CR.4
QM.9 CR.6 Metric 6	Median time from hospital arrival to the time of skin puncture to access the artery (e.g., brachial, carotid, femoral, radial) selected for endovascular treatment (EVT) of acute ischemic stroke		
QM.9 CR.6 Metric 6a	Median time from hospital arrival to the time of skin puncture to access the artery (e.g., brachial, carotid, femoral, radial) selected for endovascular treatment (EVT) of acute ischemic stroke in patients who are transferred from another hospital	QM.9-CR.6a	Median Time from Hospital Arrival to Skin Puncture – Transfer In <i>Histogram of the distribution of times from hospital arrival to the time of skin puncture to access the artery (e.g., brachial, carotid, femoral, radial) selected for endovascular treatment (EVT) of acute ischemic stroke in patients who are transferred from another hospital</i>
QM.9 CR.6 Metric 6b	Median time from hospital arrival to the time of skin puncture to access the artery (e.g., brachial, carotid, femoral, radial) selected for endovascular treatment (EVT) of acute ischemic stroke in patients who present directly to your hospital, OR mode of arrival not documented	QM.9-CR.6b	Median Time from Hospital Arrival to Skin Puncture – Direct Presenters or Mode of Arrival ND <i>Histogram of the distribution of times from hospital arrival to the time of skin puncture to access the artery (e.g., brachial, carotid, femoral, radial) selected for endovascular treatment (EVT) of acute ischemic stroke in patients who are direct presenters or mode of arrival is not documented</i>
QM.9 CR.7 Metric 7	Percentage of ischemic stroke patients who develop a symptomatic intracranial hemorrhage within 36 hours after the onset of treatment with intra-venous (IV) or intra-arterial (IA) thrombolytic therapy, or mechanical endovascular reperfusion procedure	QM.9 CR.7	Percentage of ischemic stroke patients with complications <i>due to thrombolytic therapy or mechanical endovascular reperfusion received at your hospital</i>
QM.9 CR.7a Metric 7a	Percentage of ischemic stroke patients who develop a symptomatic intracranial hemorrhage within 36 hours after the onset of treatment with intra-venous (IV) thrombolytic therapy only	QM.9-CR.7-1	Complications of IV Thrombolytic Therapy <i>Percent of ischemic stroke patients with complications due to IV thrombolytic therapy received at your hospital</i>

DNV Integrated Stroke Center Certification Program Requirements

Required DNV QM.9 Metric	DNV Definition	Equivalent DNV Measure in GWTG	Measure Definition in GWTG
QM.9 CR.7b Metric 7b	Percentage of ischemic stroke patients who develop a symptomatic intracranial hemorrhage within 36 hours after the onset of treatment with IA thrombolytic therapy or mechanical endovascular reperfusion therapy.	QM.9-CR.7-2	Complications of IA Thrombolytic Therapy or MER <i>Percent of ischemic stroke patients with complications due to IA thrombolytic or mechanical endovascular therapy received at your hospital.</i>
QM.9 CR.9 Metric 9	Percentage of acute ischemic stroke patients who are treated with intravenous thrombolysis or who undergo endovascular recanalization procedure for whom there is documentation of a 90-day mRS score within 75 to 105 days.	QM.9-CR.9	90-Day mRS for IVT or EVT Patients <i>Percent of acute ischemic stroke patients who are treated with intravenous thrombolysis or endovascular recanalization procedure for whom there is documentation of a 90-day mRS score</i>
QM.9 CR.12 Metric 12	Percentage of Subarachnoid hemorrhage (aSAH) and intracerebral hemorrhage (ICH) stroke patients for whom a severity measurement (i.e., Hunt and Hess Scale or World Federation of Neurological Surgeons Scale (WFNS) for SAH patients, or ICH Score for ICH patients) is performed prior to surgical intervention and documented in the medical record; OR documented within 6 hours of arrival at the hospital emergency department for patients who do not undergo surgical intervention.	QM.9-CR.12	Baseline Severity Measurement for Hemorrhagic Stroke Patients <i>Percentage of patients with aneurysmal subarachnoid hemorrhage (aSAH) in whom an initial severity score is measured using a validated scale (e.g., Hunt and Hess, World Federation of Neurological Surgeons Scale (WFNS)) and a total score recorded as part of initial evaluation on arrival at the hospital, or patients with intracerebral hemorrhage (ICH) in whom a baseline severity score is measured and a total score recorded as part of initial evaluation on arrival at the hospital,</i>
QM.9 CR.12a Metric 12a	Percentage of aSAH stroke patients for whom a severity measurement is performed (i.e., Hunt and Hess Scale or World Federation of Neurological Surgeons Scale (WFNS) prior to surgical intervention and documented in the medical record; OR documented within 6 hours of hospital arrival for patients who do not undergo surgical intervention.	QM.9-CR.12a	Baseline Severity Score for SAH Patients <i>Percentage of patients with aneurysmal subarachnoid hemorrhage (aSAH) in whom an initial severity score is measured using a validated scale (e.g., Hunt and Hess, World Federation of Neurological Surgeons Scale (WFNS)) and a total score recorded as part of initial evaluation on arrival at the hospital.</i>
QM.9 CR.12b Metric 12b	Percentage of ICH stroke patients for whom a severity measurement is performed prior to surgical intervention and documented in the medical record; OR documented within 6 hours of hospital arrival for patients who do not undergo surgical intervention.	QM.9-CR.12b	Baseline Severity Score for ICH Patients <i>Percentage of patients with intracerebral hemorrhage in whom a baseline severity score is measured and a total score recorded as part of initial evaluation on arrival at the hospital</i>
QM.9 CR.15 Metric 15	Percentage of patients with documented aneurysmal SAH for whom Nimodipine treatment is started within 24 hours of diagnosis and for whom such treatment is continued until 21 days after the hemorrhage or until discharge if they are discharged less than 21 days after the aSAH.	QM.9-CR.15	Nimodipine Treatment within 24 Hours and continued <i>Percentage of patients with documented aneurysmal SAH for whom Nimodipine treatment is started within 24 hours of diagnosis and is continued until 21 days after the hemorrhage or until discharge if they are discharged less than 21 days after the SAH.</i>

DNV Integrated Stroke Center Certification Program Requirements

Required DNV QM.9 Metric	DNV Definition	Equivalent DNV Measure in GWTG	Measure Definition in GWTG
PC.4 CR.4i MR.4 CR.2	In the event an eligible patient with ischemic stroke does not receive IV thrombolytic therapy, documentation will support the rationale. Documentation indicating reason if an eligible ischemic stroke patient does not receive IV thrombolytic therapy.	MR.4-CR.2	Reasons for No IV Thrombolytic <i>Reasons why eligible acute ischemic stroke patients were not treated with IV thrombolytic at my hospital.</i>
PC.5 CR.5 MR.4 CR.3	All patients who arrive within 24 hours of onset of stroke symptom recognition, are assessed for endovascular treatment options whether receiving IV thrombolytic therapy or not a candidate for IV thrombolytic therapy. Documentation must be present as to the decision by the treating physician. Documentation indicating the assessments of all stroke patients, whether they received IV thrombolytic therapy or not, to determine the eligibility/recommendation for endovascular intervention. <i>Previously captured during medical record review</i>	MR.4-CR.3	Endovascular Intervention for Eligible Patients with Ischemic Stroke <i>Percentage of eligible patients with ischemic stroke due to large vessel occlusion who receive mechanical endovascular reperfusion therapy.</i>
QM.9 CR.18 Metric 18	Complication rates for aneurysm endovascular and/or surgical treatment.	QM.9-CR.18	Complication Rates for Aneurysm Endovascular and/or Surgical Treatment <i>Complication rate for hemorrhagic stroke patients who receive endovascular and/or surgical treatment.</i>
QM.9 CR.18a Metric 18a	Patients with unruptured cerebral aneurysms undergoing endovascular treatment with complications.	QM.9-CR.18a	Complication Rates for Unruptured Brain Aneurysm Undergoing Endovascular Treatment <i>Patients with unruptured brain aneurysms undergoing endovascular treatment with complications.</i>
QM.9 CR.18b Metric 18b	Patients with a ruptured cerebral aneurysm undergoing endovascular treatment with complications.	QM.9-CR.18b	Complication Rates for Ruptured Brain Aneurysm Undergoing Endovascular Treatment <i>Patients with a ruptured brain aneurysm undergoing endovascular treatment with complications.</i>
QM.9 CR.18c Metric 18c	Patients with unruptured cerebral aneurysms undergoing surgical treatment with complications.	QM.9-CR.18c	Complication Rates for Unruptured Brain Aneurysm Undergoing Surgical Treatment <i>Patients with unruptured brain aneurysms undergoing surgical treatment with complications.</i>
QM.9 CR.18d Metric 18d	Patients with ruptured cerebral aneurysms undergoing surgical treatment with complications.	QM.9-CR.18d	Complication Rates for Ruptured Brain Aneurysm Undergoing Surgical Treatment <i>Patients with ruptured brain aneurysms undergoing surgical treatment with complications.</i>
QM.9 CR.20 Metric 20	Percentage of patients undergoing surgical or endovascular treatment of a hemorrhagic AVM who have another stroke or expire during the procedure or within 24 hours of the procedure.	QM.9-CR.20 Update June 2025	Surgical or Endovascular Treatment of a Hemorrhagic AVM with Stroke or Death <i>Percentage of patients undergoing surgical or endovascular treatment of a hemorrhagic AVM who have another stroke or expire during the procedure or within 24 hours of the procedure</i>

DNV Integrated Stroke Center Certification Program Requirements

Required DNV QM.9 Metric	DNV Definition	Equivalent DNV Measure in GWTG	Measure Definition in GWTG
QM.9 CR.24 Metric 24	Percentage of patients who have a diagnosis of ischemic or hemorrhagic stroke who undergo EVD and then develop ventriculitis.	QM.9-CR.24	Ventriculitis from External Ventricular Drain (EVD) <i>Percent of patients who have a diagnosis of ischemic or hemorrhagic stroke who undergo external ventricular drain (EVD) and then develop ventriculitis.</i>
QM.9 CR.27 Metric 27	Percentage of acute ischemic stroke patients who receive mechanical endovascular reperfusion therapy who have post reperfusion grade of TICl 2b or higher.	QM.9-CR.27	Rate of Substantial Reperfusion <i>Percentage of patients with acute ischemic stroke who receive mechanical endovascular reperfusion therapy who have post-reperfusion TICl grade 2b or 3.</i>
QM.9 CR.28 Metric 28	Percentage of ischemic stroke patients with a large vessel cerebral occlusion receive mechanical endovascular reperfusion (MER) within 120 minutes of hospital arrival and achieve TICl 2b or higher at the end of treatment.	QM.9-CR.28	Door to Recanalization/Reperfusion (DTRp) within 120 Minutes <i>Percentage of patients with acute ischemic stroke who receive mechanical endovascular reperfusion therapy and for whom the time from hospital arrival to recanalization/reperfusion with TICl grade 2b or 3 is ≤120 minutes.</i>
QM.9-CR.29 Metric 29	Percentage of ischemic stroke patients with a large vessel cerebral occlusion receive mechanical endovascular reperfusion (MER) therapy and for whom the time from skin puncture to recanalization/reperfusion achieve TICl 2b or higher in less than or equal to 60 minutes.	QM.9-CR.29	Skin Puncture to Recanalization/Reperfusion (DTRp) within 60 Minutes <i>Percentage of acute ischemic stroke patients with a large vessel cerebral occlusion who receive mechanical endovascular reperfusion therapy and for whom the time from skin puncture to recanalization/reperfusion with TICl grade 2b or 3 is ≤ 60 minutes.</i>



ABOUT DNV

DNV is a global independent certification, assurance and risk management provider, operating in more than 100 countries. Through its broad experience and deep expertise, DNV advances safety and sustainable performance, sets industry benchmarks, and drives innovative solutions.

Whether certifying a company's management system or products, providing training, assessing supply chains or digital assets, DNV enables customers and stakeholders to make critical decisions with confidence to continually improve and realize long-term strategic goals, sustainably.

DNV draws on its wide technical and industry expertise to help companies worldwide build consumer and stakeholder trust. Driven by its purpose to safeguard life, property, and the environment, DNV helps tackle the challenges and global transformations facing its customers and the world today and is a trusted voice for many of the world's most successful and forward-thinking companies.

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