American College of Radiology National Radiology Data Registry

Qualified Clinical Data Registry Measures

January 2026

QCDR Measure Number	ACRad 34
Measure Title:	Multi-strata weighted average for 3 CT Exam Types: Overall Percent of CT exams for which Dose Length Product is at or below the size-specific diagnostic reference level (for CT Abdomen-pelvis with contrast/single phase scan, CT Chest without contrast/single phase scan and CT Head/Brain without contrast/single phase scan)
Measure Description	Weighted average of 3 former QCDR measures, ACRad 31, ACRad 32, ACRad 33.
QCDR Measure Type	Existing Approved QCDR Measure with No Changes
Does this measure belong to another QCDR?	No
NQF Number	NQF #3621
NQS Domain	Patient Safety
Care Setting	Ambulatory, Outpatient hospital, Inpatient hospital, Imaging facility
Denominator	Number of CT Abdomen-pelvis exams with contrast (single phase scans), CT Chest exams without contrast (single phase scans), and CT Head/Brain (single phase scans)
Denominator Exclusions	None
Denominator Exceptions	None
Numerator	Number of CT Abdomen-Pelvis exams with contrast (single phase scan), CT Chest exams without contrast (single phase scan), and CT Head/Brain exams without contrast (single phase scan) for which Dose Length Product is at or below the size-specific exam-specific diagnostic reference level.
Numerator Exclusions	None
Number of performance rates to be submitted	3
Indicate an Overall Performance Rate if more than 1	Weighted average
Performance Rate Description	This measure will be calculated using the weighted average of three performance rates: Rate 1: Percent of CT Abdomen-pelvis exams with contrast (single phase scan) for which Dose Length Product is at or below the size-specific diagnostic reference level Rate 2: Percent of CT Chest exams without contrast (single phase scan) for which Dose Length Product is at or below the size-specific diagnostic reference level

	Rate 3: Percent of CT Head/brain exams without contrast (single phase scan) for which Dose Length Product is at or below the size-specific diagnostic reference level
Measure Type (Process/Outcome)	Outcome
High Priority Measure	Yes
Outcome Measure	Yes
Inverse Measure	No
Proportion Measure	Yes
Continuous Measure	No
Ratio Measure	No
If continuous variable or ratio is chosen, what would be the range of the scores?	N/A
Is the measure risk adjusted?	No
If risk-adjusted, which score is risk-adjusted?	N/A
Is the QCDR measure able to be abstracted?	Yes
Data Source	Registry (Dose Index Registry)
Clinical Recommendation Statement	This measure is a composite of three previously approved QCDR measures, ACRad 31, ACRad 32, and ACRad 33. There has been a considerable rise in use of Computed Tomography (CT) over the past 10 years. With that, there is also a significant increase in the population's cumulative exposure to ionizing radiation. A CT study should use as little radiation as possible, while still meeting the image quality needs of the exam. Dose Length Product (DLP) is a standardized parameter to measure scanner radiation output to a patient and is a useful index to compare protocols across different practices and scanners. Providing comparative data across exam types to a physician or site will help adjust imaging protocols to obtain diagnostic images using the lowest reasonable dose. This measures the CT scanner radiation output specific to a patient and exam, comparing and benchmarking the actual dose index delivered to patients. While DLP itself is not a measure or estimate of actual patient radiation dose, it is closely related to doses received by patients. DLP is a measure of scanner output received and experienced by patients and not simply documentation of whether DLP was recorded. This measure is calculated at the facility level because protocol optimization is the combined effort of physicians, medical physicists and technologists in the practice, and change needs to be driven by the interpreting physicians as a team. Physicians see this

information when interpreting an image and can participate actively with the rest of their team to manage the dose while maintaining diagnostic quality images.

The determination of ionizing radiation dose to a living human is very complex and poses many challenges for referring physicians, radiologists, radiologic technologists, medical physicists, equipment vendors, regulators, and patients. To determine the absorbed radiation dose, the initial x- ray beam exposure and the absorption in each organ must be known. It is the latter quantity that complicates this determination. This absorption is dependent on the amount and properties of each tissue encountered by the x-ray beam, and these parameters vary widely among patients. The situation is further complicated because it is not practical to insert radiation detectors into each organ of every patient. It is important to understand that the reported numerical values for individual radiation doses may vary by factors of 5 to 10 depending on individual patients and the manner of image acquisition.

There are many challenges in dose monitoring, including collection of accurate data with minimal effort on the part of the facility, standardization of procedure names so that benchmarks can be applied appropriately, and adjustment for patient sizes. Dose registries would enable facilities to compare their radiation doses to those delivered in other facilities for the same exam, and such comparisons over time could assist in optimizing patient radiation doses for medical imaging. The goals of tracking imaging exams and the associated radiation exposure include: (1) providing information at the point-of-care for the referring practitioner (i.e. supporting justification); (2) promoting development and use of diagnostic reference levels (DRLs) (i.e. supporting optimization); (3) providing information for assessment of radiation risks; and (4) establishing a tool for use in research and epidemiology.

References:
1. Amis ES Jr, Butler PF, Applegate KE, et al; American College of Radiology. American College of Radiology white paper on radiation dose in medicine J AM Coll Radiol. 2007;4(5):272-284.
2. Bindman-Smith R, Lipson J, Marcus R, et al. Radiation Dose Associated with Common Computed Tomography Examinations and the Associated Lifetime Attributable Risk of Cancer. Arch Intern Med 2009; 169 (22)2078-2085.
3. ACR–AAPM PRACTICE GUIDELINE FOR DIAGNOSTIC REFERENCE LEVELS AND ACHIEVABLE DOSES IN MEDICAL X-RAY IMAGING Rev. 2013 http://www.acr.org/~/media/ACR/Documents/PGTS/guidelines/Reference_Levels.pdf
4. The Joint Commission Sentinel Alert Issue 47 – Radiation

risks of diagnostic imaging, August 24
2011 http://www.jointcommission.org/sea_issue_47/
5. The Joint Commission Standards: Diagnostic Imaging Services; August 10, 2015
http://www.jointcommission.org/assets/1/18/AHC_DiagImagingRpt_MK_20150806.pdf
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8. Radiation Risks and Pediatric Computed Tomography (CT): A Guide for Health Care Providers -from NCI and SPR. Www.nci.nih.gov/cancertopics/causes/radiation-risks-pediatric-CT.
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http://www.fda.gov/downloads/RadiationEmittingProducts/RadiationSafety/RadiationDoseReduction/UCM200087.pdf
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Levels and Achievable Doses for Ten Adult CT Examinations, Radiology, 2017, ahead of print.
(http://pubs.rsna.org/doi/abs/10.1148/radiol.2017161911?journalCode=radiology)

Rationale

There has been a considerable rise in use of Computed Tomography (CT) over the past 10 years. With that, there is also a significant increase in the population's cumulative exposure to ionizing radiation. A CT study should use as little radiation as possible, while still meeting the image quality needs of the exam. Dose Length Product (DLP) is a standardized parameter to measure scanner radiation output to a patient and is a useful index to compare protocols across different practices and scanners. Providing comparative data across exam types to a physician or site will help adjust imaging protocols to obtain

	diagnostic images using the lowest reasonable dose. This measures the CT scanner radiation output specific to a patient and exam, comparing and benchmarking the actual dose index delivered to patients. While DLP itself is not a measure or estimate of actual patient radiation dose, it is closely related to doses received by patients. DLP is a measure of scanner output received and experienced by patients and not simply documentation of whether DLP was recorded. This measure is calculated at the facility level because protocol optimization is the combined effort of physicians, medical physicists and technologists in the practice, and change needs to be driven by the interpreting physicians as a team. Physicians see this information when interpreting an image and can participate actively with the rest of their team to manage the dose while maintaining diagnostic quality images.
Specialty this measure applies to	Radiology
Measure Funding Source (Steward)	American College of Radiology

QCDR Measure Number	ACRad 44
Measure Title:	Comprehensive Reporting of Coronary Artery Calcification (CAC) on Chest CT
Measure Description	Percentage of final reports for any chest CT examinations (non-cardiac, with or without contrast) performed on patients, aged 18 and older, that: 1. Document the presence or absence of coronary artery calcification (CAC), 2. If CAC is present, include documentation of a qualitative visual assessment of CAC and a recommendation that the patient consult with their primary care clinician for a comprehensive cardiovascular risk assessment, or a quantitative ordinal assessment of CAC for each of the four main coronary arteries. Recommendations for cardiovascular risk assessment should accompany any non-zero score.
QCDR Measure Type	Updated QCDR Measure (Formerly ACRad 36)
Does this measure belong to another QCDR?	No
NQF Number	N/A
NQS Domain	Communication and Care Coordination
Care Setting	Ambulatory, Outpatient hospital, Inpatient hospital
Denominator	All final reports for patients aged 18 years or older, undergoing non-cardiac chest CT with or without contrast.
Denominator Exclusions	Patients who have received prior coronary artery bypass grafts or prior percutaneous coronary intervention with stent; patients with known CAD; trauma or intraoperative CTs.
Denominator Exceptions	Instances when anatomical variability, patient positioning, or motion artifact prevent CAC detection and/or visual assessment. Studies may be removed from the denominator when the interpreting radiologist determines that CAC assessment is not feasible or appropriate due to image quality or clinical context, including post-contrast exams where diagnostic confidence is insufficient.
Numerator	Final reports that document: 1. The presence or absence of coronary artery calcification (CAC); 2. If CAC is present, either: - A qualitative visual assessment of CAC and a recommendation that the patient consult with their

	primary care clinician for a comprehensive cardiovascular risk assessment, OR - A quantitative ordinal assessment of CAC for each of the four main coronary arteries. Recommendations for cardiovascular risk assessment should accompany any non-zero score.
Numerator Exclusions	None
Number of performance rates to be submitted	1
Indicate an Overall Performance Rate if more than 1	N/A
Performance Rate Description	N/A
Measure Type (Process/Outcome)	Process
High Priority Measure	Yes
Outcome Measure	No
Inverse Measure	No
Proportion Measure	Yes
Continuous Measure	No
Ratio Measure	No
If continuous variable or ratio is chosen, what would be the range of the scores?	N/A
Is the measure risk adjusted?	No
If risk-adjusted, which score is risk-adjusted?	N/A
Is the QCDR measure able to be abstracted?	Yes
Data Source	Registry (General Radiology Improvement Database)
Clinical Recommendation Statement	The following evidence statements are quoted verbatim from the referenced clinical guidelines and other sources, where applicable: [Coronary Artery Calcium (CAC)] should be evaluated and reported on all noncontrast chest CT examinations (Class I Recommendation) (SCCT/STR, 2016) 1. Hecht HS, Cronin P, Blaha MJ, et al. 2016 SCCT/STR guidelines for coronary artery calcium scoring of noncontrast noncardiac chest CT scans: A report of the Society of Cardiovascular Computed Tomography and Society of Thoracic Radiology. J Cardiovasc Comput Tomogr. 2017 Jan - Feb;11(1):74-84. doi: 10.1016/j.jcct.2016.11.003. Epub 2016 Nov 10. 3. Jairam PM, Gondrie MJA, Grobbee DE, Mali WP, Jacobs

PCA, van der Graaf Y. Incidental imaging findings from routine chest CT used to identify subjects at high risk of future cardiovascular events. Radiology. 2014;3:700-708.
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Rationale

Coronary artery calcium scoring predicts cardiovascular risk. Any calcification that is present is a predictor of cardiovascular disease and can be described without specific scoring. In cases where CAC is present, a standard referral for clinical evaluation can be made. While patients undergoing noncardiac chest CTs are not undergoing an evaluation for coronary artery calcium scoring, there are cases where coronary artery calcifications are found. Studies have shown that these incidental findings have value and can be used to stratify patient cardiovascular risk based on findings in conjunction with patient history, which can lead to improved prognosis and outcome.

Documentation of the presence of coronary artery calcium on noncardiac chest CTs is often underreported in radiology reports, even though primary physicians would likely use this information to inform treatment decisions. In a retrospective review of non-gated noncontrast chest CTs, researchers found approximately one-third of the time, the presence of coronary artery calcium was not documented, even though it was present on the chest CT. This measure aims to improve the communication of CAC findings to referring physicians to improve patient's cardiovascular care management.

Specialty this measure applies to

Radiology

Measure Funding Source (Steward)

American College of Radiology

QCDR Measure Number	ACRad 45
Measure Title:	Interpretation of CT Pulmonary Angiography (CTPA) for Pulmonary Embolism

Measure Description	Percentage of final reports for patients aged 18 years and older undergoing CT pulmonary angiography (CTPA) with a finding of PE that specify the branching order level of the most proximal level of embolus (i.e. main, lobar, interlobar, segmental, subsegmental); AND right ventricle to left ventricle (RV/LV) ratio, when assessable. If the RV/LV ratio is ?1.0, report the specific ratio value, as this may be associated with increased risk for adverse outcomes, and if the RV/LV ratio is <1.0, report that the ratio is within normal limits, optionally including a range (e.g., 0.7-0.9) to support clinical context.
QCDR Measure Type	Updated QCDR Measure (Formerly ACRad 37)
Does this measure belong to another QCDR?	No
NQF Number	N/A
NQS Domain	Communication and Care Coordination
Care Setting	Ambulatory, Outpatient hospital, Inpatient hospital, ED
Denominator	All final reports for patients aged 18 years or older undergoing CT pulmonary angiography (CTPA) with a finding of pulmonary embolism.
Denominator Exclusions	None
Denominator Exceptions	Instances in which right heart strain assessment is not assessable due to technical limitations (e.g., scanner protocols) suboptimal image quality due to motion artifact, or incomplete visualization of cardiac structures.
Numerator	Final reports that specify the following elements: 1. Branching order level of the most proximal level of embolus (i.e. main, lobar, interlobar, segmental, subsegmental), AND 2. Right ventricle to left ventricle (RV/LV) ratio, when assessable: - If the RV/LV ratio is ?1.0, report the specific ratio value, as this may be associated with increased risk for adverse outcomes. - If the RV/LV ratio is <1.0, report that the ratio is within normal limits, optionally including a range (e.g., 0.7-0.9) to support clinical context.

	Numerator Note: This measure does not require or imply a diagnostic determination of right heart strain.
Numerator Exclusions	None
Number of performance rates to be submitted	1
Indicate an Overall Performance Rate if more than 1	N/A
Performance Rate Description	N/A
Measure Type (Process/Outcome)	Process
High Priority Measure	Yes
Outcome Measure	No
Inverse Measure	No
Proportion Measure	Yes
Continuous Measure	No
Ratio Measure	No
If continuous variable or ratio is chosen, what would be the range of the scores?	N/A
Is the measure risk adjusted?	No
If risk-adjusted, which score is risk-adjusted?	N/A
Is the QCDR measure able to be abstracted?	Yes
Data Source	Registry (General Radiology Improvement Database)
Clinical Recommendation Statement	The following evidence statements are quoted verbatim from the referenced clinical guidelines and other sources, where applicable: Normal CT angiography safely excludes PE in patients with low or intermediate clinical probability or PE-unlikely. (Class I Recommendation; Level of Evidence A) (ESC, 2014) Normal CT angiography may safely exclude PE in patients with high clinical probability or PE -likely. (Class IIa Recommendation; Level of Evidence B) (ESC, 2014) CT angiography showing a segmental or more proximal thrombus confirms PE. (Class I Recommendation; Level of Evidence B) (ESC, 2014) Further testing to confirm PE may be considered in case of isolated sub-segmental clots. (Class IIb Recommendation; Level of Evidence C) (ESC, 2014)

Rationale

CoAn estimated 290,000 events of fatal pulmonary embolism (PE) and 230,000 events of nonfatal PE occur in the United States every year. CT pulmonary angiography (CTPA) is the primary imaging modality for evaluating patients suspected of having acute PE. Identification of the embolus and documentation of the location of the embolus influence treatment decisions. Massive central PE increases the risk for right ventricular overload and PE-related mortality. In contrast, subsegmental pulmonary emboli are often noted on CTPA but may not require treatment or follow-up. More appropriate treatment stratification can occur to potentially reduce unnecessary costs and risks for bleeding. Additional level of specification at the subsegmental level will support avoidance of over treatment due to greater degree of prognosis.

Variation in care:
The practice for reporting CTPA varies between reporting only positive or negative PE finding without specifying proximal level of embolus, and inclusion of a more specific level of embolus.

A retrospective analysis of CTPA reports found that of 2,151 consecutive reports, 10% were definitively positive for PE but did not specifically describe the location of the PE. Also, 27% of the reports specifically documented the absence of PE down to the segmental artery level but did not specifically address the presence or absence of subsegmental PE. Anticoagulation treatment is recommended if PE is located proximal to the subsegmental level, whereas anticoagulation is controversial and not always recommended if the only level of PE is subsegmental.

One study (1) found patterns of reporting (from 2151 CTPA reports) varies on the basis of radiologists' subspecialties, experience and other factors as follows: " (1) PE conclusively positive (10%), (2) PE conclusively negative (29%), (3) PE negative to segmental arteries (27%), (4) PE negative to central pulmonary arteries (21%), (5) PE negative but suboptimal examination (8%), and (6) nondiagnostic examination (5%)"

Another study (2) indicated that "the location of emboli seems to be more important in predicting short-term mortality than the percent embolic obstruction of the pulmonary arterial bed. The study also found that specificity of pulmonary hypertension "increases to 100% if accompanied by findings of a segmental artery-to-bronchus ratio greater than one in three of four pulmonary lobes".

(1) Abujudeh HH, Kaewlai R, Farsad K, Orr E, Gilman M,

	Shepard JO. Computed tomography pulmonary angiography: an assessment of the radiology report. Acad Radiol. 2009;16:1309-1315 (2) Doğan H, de Roos A, Geleijins J, Huisman MV, Kroft LJM. The role of computed tomography in the diagnosis of acute and chronic pulmonary embolism. Diagn Interv Radiol. 2015;21:307-316.
Specialty this measure applies to	Radiology
Measure Funding Source (Steward)	American College of Radiology

QCDR Measure Number	ACRad 46
Measure Title:	Standardized Spine Fracture Classification Using Validated Systems

Measure Description	Percentage of final reports for patients with acute spinal fractures undergoing initial CT of the spine that include descriptive imaging findings.
QCDR Measure Type	New QCDR Measure
Does this measure belong to another QCDR?	No
NQF Number	N/A
NQS Domain	Communication and Care Coordination
Care Setting	Ambulatory; Hospital Inpatient; Hospital Outpatient; Imaging Facility
Denominator	All patients, regardless of age, undergoing initial cross-sectional imaging that includes the spine and with findings of an acute traumatic vertebral body fracture.
Denominator Exclusions	Final reports of patients undergoing follow-up imaging of the spine who have spinal fractures. Patients for whom a prior exam exists with AO or TLICS classification. Compression fractures in patients with osteoporosis, cancer, spinal osteomyelitis.
Denominator Exceptions	Study quality limits the evaluation of the imaging signs needed for the AO or TLICS classification.
Numerator	All final reports for patients with acute spinal fracture on initial cross-sectional imaging that include comprehensive documentation of relevant injury features (see Guidance). Numerator Note: The measure is based on CT findings. MRI may be used to supplement evaluation when clinically indicated or available.
Numerator Exclusions	None
Number of performance rates to be submitted	1
Indicate an Overall Performance Rate if more than 1	N/A
Performance Rate Description	N/A
Measure Type (Process/Outcome)	Process
High Priority Measure	Yes
Outcome Measure	No

Inverse Measure	No
Proportion Measure	Yes
Continuous Measure	No
Ratio Measure	No
If continuous variable or ratio is chosen, what would be the range of the scores?	N/A
Is the measure risk adjusted?	No
If risk-adjusted, which score is risk-adjusted?	N/A
Is the QCDR measure able to be abstracted?	Yes
Data Source	Registry (General Radiology Improvement Database)
Clinical Recommendation Statement	Patients whose imaging reports indicate spinal fractures but lack detailed fracture feature descriptions are at increased risk for delayed or inaccurate diagnosis, including misinterpretation of fracture severity. This diagnostic uncertainty can lead to inappropriate treatment decisions, such as unnecessary surgical interventions or missed opportunities for timely stabilization. The absence of standardized reporting also contributes to poorer patient outcomes, including increased risk of neurological complications, chronic pain, and long-term disability. National Institute of Neurological Disorders and Stroke. (n.d.). Spinal Cord Injury. National Institutes of Health. https://www.ninds.nih.gov/health-information/disorders/spinal-cord-injury
Rationale	Background Spinal fractures represent a significant clinical burden, with an estimated 1.5 to 2 million cases occurring annually in the United States. Given their prevalence and potential for severe morbidity, standardized classification and timely and accurate diagnosis are essential to ensure optimal outcomes. Advances in imaging technologies, particularly CT and MRI, have enhanced clinicians' ability to assess fracture morphology and spinal stability, critical for guiding evidence-based treatment decisions. Standardized spinal fracture classification systems, such as the AO Spine and the Thoracolumbar Injury Classification and Severity Score (TLICS), enable consistent interpretation of imaging findings, promote uniform clinical decision-making, and support the delivery of high-quality care. By establishing a common language among providers, these systems reduce variability in treatment, facilitate communication across care teams, and provide a foundation for performance measurement and

quality improvement.

Care Gap

Despite the availability of spinal fracture classification systems such as the AO Spine and TLICS frameworks, radiologists do not consistently report all imaging findings that are needed to easily map them to a classification system. This inconsistency is concerning, as classification scores can directly inform critical treatment decisions, including whether a patient should undergo surgical or nonsurgical management. Studies have shown that standardized use of these systems improves interobserver reliability and supports more consistent, evidence-based decision-making.6 Since classification systems may include the patient's clinical status, which may not be known to the radiologist, this measure focuses on detailed fracture feature descriptions.

Clinical Justification

Patients whose imaging reports indicate spinal fractures but lack detailed fracture feature descriptions are at increased risk for delayed or inaccurate diagnosis, including misinterpretation of fracture severity. This diagnostic uncertainty can lead to inappropriate treatment decisions, such as unnecessary surgical interventions or missed opportunities for timely stabilization. The absence of standardized reporting also contributes to poorer patient outcomes, including increased risk of neurological complications, chronic pain, and long-term disability.

Impact on Healthcare Utilization and Costs

The average cost per spinal fracture patient is an estimated $34,855 annually. Much of that is driven by longer hospital stays, additional surgeries, and need for extended rehabilitation. Based on the average cost per spinal fracture patient and the documented benefits of using the AO Spine or TLICS Classification system, it may be inferred that standardizing its use could reduce this amount by up to 20 percent.

Spinal fractures are high-acuity injuries that often require advanced imaging, multidisciplinary evaluation, and surgical intervention. These care components contribute to substantial healthcare expenditures, particularly when complications such as neurological impairment, chronic pain, or long-term disability occur. The financial burden is further exacerbated by inconsistent use or lack of comprehensive standardized fracture feature reporting that can be mapped to spinal fracture classification systems, such as the AO Spine and Thoracolumbar Injury Classification and Severity Score (TLICS). The absence of comprehensive standardized fracture

	feature reporting contributes to diagnostic variability, fragmented care coordination, and inappropriate treatment decisions, which can lead to both overtreatment (e.g., unnecessary surgery) and undertreatment (e.g., missed unstable fractures). These missteps increase the likelihood of complications, readmissions, and prolonged recovery, all of which drive up healthcare costs. Although large-scale economic evaluations are limited, the clinical utility of AO Spine and TLICS systems is well-documented. These systems improve interobserver reliability, support evidence-based triage, and promote consistent decision-making across providers. By reducing variability in care and aligning treatment with injury severity, classification systems help avoid unnecessary interventions and associated costs. Further, the use of structured classification tools aligns with CMS's goals under the Merit-based Incentive Payment System (MIPS) by promoting standardized, high-quality, and cost-effective care. Improved care coordination and reduced complication rates logically support cost avoidance through fewer readmissions, shorter hospital stays, and more efficient use of resources.
Specialty this measure applies to	Radiology
Measure Funding Source (Steward)	American College of Radiology

MSN HEALTHCARE SOLUTIONS

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Quality ID #MEDNAX55: Use of ASPECTS (Alberta Stroke Program Early CT Score) for Non-Contrast CT Head Performed for Suspected Acute Stroke

- **National Quality Strategy Domain: Effective Clinical Care**
- **Meaningful Measure Area: Appropriate Use of Healthcare**

2026 COLLECTION TYPE:
QUALIFIED CLINICAL DATA REGISTRY QUALITY MEASURE (QCDR)

MEASURE TYPE:
Process

DESCRIPTION:
Percentage of final reports for non-contrast CT Head (NCCT Head) performed for suspected acute stroke that include an ASPECTS value.

INSTRUCTIONS:
This measure is to be submitted **each time** a non-contrast CT Head (NCCT Head) is performed for suspected acute stroke during the performance period. Eligible clinicians who provide the professional component of non-contrast CT Heads will submit this measure.

Measure Submission Type:
Measure data may only be submitted by the measure steward or third-party-intermediaries possessing licensing rights from the measure steward. The listed denominator criteria are used to identify the intended patient population. The numerator options included in this specification are used to submit the quality actions as allowed by the measure.

DENOMINATOR:
All final reports for NCCT Head performed for suspected acute stroke*.

Denominator Criteria (Eligible Cases):
All patients, regardless of age,
AND
Patient procedure during the performance period (CPT): 70450
AND
Performed for suspected stroke* **(EE055)**

Denominator Exclusion(s): Acute hemorrhage **(DE055)**

***Denominator Note:** *Either expressly stated or indication lists relevant symptoms of stroke.*

NUMERATOR:
Final reports for NCCT Head performed for suspected acute stroke that include an ASPECTS value*.

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***Numerator Note:** Terminology in the report must include one or more of the following:*

- *Alberta Stroke Program Early CT Score*
- *ASPECTS*
- *ASPECT Score*

In instances where the study is normal, the numeric ASPECTS score of 10/10 is still preferred, but may be substituted by clear verbiage indicating there was no acute stroke (e.g., no acute cerebral ischemia, no definite acute intracranial hemorrhage or mass effect identified, no acute intracranial hemorrhage or cerebral edema, etc.).

Numerator Options:

Performance Met:

MEDNAX 100A: Final report includes an ASPECTS value **(PM055)**

OR

Performance Not Met:

MEDNAX 100F: Final report does not include an ASPECTS value **(PNM55)**

RATIONALE:

Non-contrast CT Head is the most common initial imaging modality used for assessment of acute stroke. By applying a quantitative approach to determine the extent of ischemic changes, ASPECTS provides a reliable grading system for detection of early ischemic changes in the middle cerebral artery circulation on non-contrast CT Head in patients with suspected acute stroke. Several trials have demonstrated that baseline core infarct size is a predictor of endovascular reperfusion outcomes in the setting of acute stroke. Studies have also shown that patients with a large infarct burden are unlikely to benefit from endovascular reperfusion therapy and experience a high rate of symptomatic intracranial hemorrhage when treated with endovascular therapy, suggesting they should be excluded from such treatment. ASPECTS values quantify infarct size and thus are useful in predicting the likelihood of benefit and/or adverse outcomes from endovascular reperfusion therapy and in assessing patients' eligibility for treatment.

References:

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Program Early CT Score on clinical outcome after intra-arterial stroke therapy. Stroke. 2014 Mar;45(3):746-51. doi: https://doi.org/10.1161/STROKEAHA.113.004260.

4. Pexman JH, Barber PA, Hill MD, Sevick RJ, Demchuk AM, Hudon ME, Hu WY, Buchan AM. Use of the Alberta Stroke Program Early CT Score (ASPECTS) for assessing CT scans in patients with acute stroke. AJNR Am J Neuroradiol. 2001 Sep;22(8):1534-42.
5. Sair H, Murphy A. Alberta stroke programme early CT score (ASPECTS). Reference article, Radiopaedia.org. doi: https://doi.org/10.53347/rID-4936.

Meaningful Measure Area: Appropriate Use of Healthcare
NQS Domain: Effective Clinical Care
Measure Type: Process
Data Source: Record Review; Patient Medical Record
Care Setting(s): Hospital
Measure Stewards: MSN Healthcare Solutions, LLC
Number of Performance Rates: 1
Inverse Measure: No
High Priority Measure: No
Telehealth Measure: No
Proportion Measure Scoring: Yes
Continuous Measure Scoring: No
Ratio Measure Scoring: No
MIPS Reporting Option(s): Traditional MIPS
Risk adjustment: No
NQF Number: Not applicable
eCQM Number: Not applicable

SAMPLE CALCULATIONS:

Data Completeness =

Performance Met (a=40 procedures) + Numerator Exclusion (b=20 procedures) + Performance Not Met (b=40 procedures) = 100 procedures = **100.00%**
Eligible Population / Denominator (c=100 procedures) = 100 procedures

Performance Rate =

Performance Met (a=40 procedures) = 40 procedures = **50.00%**
Data Completeness Numerator (100 procedures) – Numerator Exclusion (20 procedures) = 80 procedures

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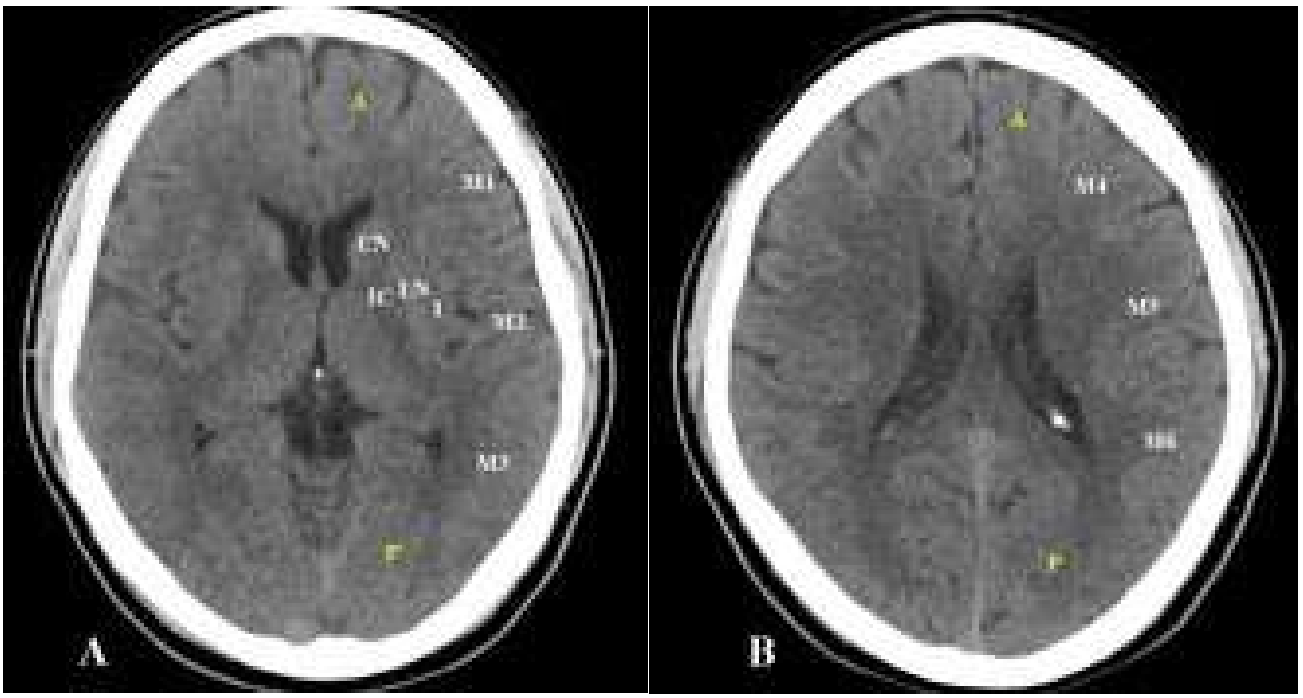
APPENDIX:

ASPECTS (Alberta Stroke Protocol Early CT Score) Methodology

1. Start with 10 points
2. Remove 1 point for every region listed below that is involved with the infarct:
    - Caudate nucleus
    - Lentiform nucleus
    - Internal capsule (any portion)
    - Insular cortex
    - M1: anterior MCA territory (frontal operculum)
    - M2: Lateral MCA territory lateral to insular ribbon (anterior temporal lobe)
    - M3: posterior MCA territory (posterior temporal lobe)
    - M4: anterior MCA territory immediately superior to M1
    - M5: lateral MCA territory immediately superior to M2
    - M6: posterior MCA territory immediately superior to M3
    - (A scan with no ischemia in the MCA territory would score 10 and a scan with involvement of all MCA territory would score 0)

ASPECTS Image Guides



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Quality ID #QMM17: Appropriate Follow-up Recommendations for Ovarian-Adnexal Lesions Using the Ovarian-Adnexal Reporting and Data System (O-RADS)

- **National Quality Strategy Domain: Communication and Care Coordination**
- **Meaningful Measure Area: Appropriate Use of Healthcare**

2026 COLLECTION TYPE:
QUALIFIED CLINICAL DATA REGISTRY QUALITY MEASURE (QCDR)

MEASURE TYPE:
Process – High Priority

DESCRIPTION:
The percentage of final reports for female patients receiving a transvaginal ultrasound (US) examination of the pelvis (including transabdominal/transvaginal exams) where a lesion is detected, in which the radiologist describes the lesion using O-RADS Lexicon Descriptors, provides O-RADS score, and subsequently makes the correct clinical management recommendation based on the O-RADS Risk Stratification and Management System.

INSTRUCTIONS:
This measure is to be submitted **each time** a female pelvic ultrasound reports a finding that qualifies for description and management under the O-RADS criteria during the performance period. Measure performance focuses on the radiologist's inclusion in the report of appropriate use of O-RADS descriptors and a subsequent O-RADS appropriate recommendation for the treating clinician to assist in overall risk stratification and management.

Measure Submission Type:
Measure data may only be submitted by the measure steward or third-party-intermediaries possessing licensing rights from the measure steward. The listed denominator criteria are used to identify the intended patient population. The numerator options included in this specification are used to submit the quality actions as allowed by the measure.

DENOMINATOR:
All final reports for US examination of the female pelvis performed transvaginal, with/without a transabdominal portion, that have a lesion.

Denominator Criteria (Eligible Cases):
All female patients, regardless of age,
AND
Patient procedure during the performance period (CPT): 76830
AND
Finding of adnexal or ovarian lesion(s) (ICD-10-CM): N83.00, N83.01, N83.02, N83.10, N83.11, N83.12, N83.201, N83.202, N83.209, N83.291, N83.292, N83.299, N83.311, N83.312, N83.319, N83.321, N83.322, N83.329, N83.331, N83.332, N83.339, N83.40,

N83.41, N83.42, N83.511, N83.512, N83.519, N83.521, N83.522, N83.529, N83.53, N83.6, N83.7, N83.8, N83.9

Denominator Exclusion(s): Findings not applicable to O-RADS classification, such as Nabothian or Uterine cysts***** **(DE017)**

***Denominator Note:** *O-RADS only applies to adnexal and ovarian lesions. Findings not applicable to O-RADS classification, such as Nabothian or Uterine cysts, are not to be included in the denominator count for this measure.*

NUMERATOR:
Final reports that include documented identification of lesion using appropriate O-RADS terminology AND subsequent recommendation of clinical management according to O-RADS criteria*****.

***Numerator Note:** *When referencing the O-RADS criteria, the radiologist must include O-RADS score, appropriate lexicon descriptors, and appropriate premenopausal or postmenopausal management for the patient. If the appropriate management recommendation for the patient is "None", "None" does not have to be documented in the final report to pass this measure as long as an O-RADS score and lexicon descriptors are included.*

Numerator Options:
Performance Met:
PM017: Final report includes documented indication of lesion using O-RADS terminology, including appropriate O-RADS score AND appropriate O-RADS management recommendation.

OR

Performance Not Met:
PNM17: Final report does not include documented indication of lesion using O-RADS terminology, including appropriate O-RADS score AND appropriate O-RADS management recommendation.

OR

Denominator Exception:
PE017: Documentation of medical reason(s) for not documenting O-RADS score (such as, patients with a limited life expectancy, no positive finding of ovarian/adnexal mass(es), or if the cyst has ruptured, etc.).

RATIONALE:
Female pelvic ultrasound is a common examination that can result in identification of ovarian/adnexal lesions of varying sizes requiring clinical management. Therefore, accurate characterization of ovarian and adnexal findings on sonography is required for optimal patient management and risk stratification [1]. It is important for the clinician to receive information to differentiate between lesions that are likely benign and those that require more advanced follow up and possible surgical management due to the risk of malignancy. The current lack of standardized terminology in gynecological imaging has led to inconsistent treatment recommendations, even within the same institution [2], potentially causing increased cost and inappropriate resource consumption [3].

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The Ovarian-Adnexal Reporting and Data System (O-RADS) US risk stratification and management system was created using a standard lexicon to eliminate these inconsistencies by using classes such as descriptors of the overall lesion, lesion size, blood flow, and internal content [2]. By use of such standardized terminology, radiologists should be able to communicate a more correct diagnosis, accurately assess the risk of malignancy, and create optimal patient treatment plans [2]. The goal is to recreate the same positive impact on gynecologic imaging as BI-RADS had on breast imaging.

Additional Info from Society of Radiologist in Ultrasound (SRU):
Updated SRU Consensus Conference Statements and Recommendations - Unnecessary follow-up of simple cysts increases the chance of surgical intervention as slow or uncertain growth can lead to recommendations for surgical removal even in the absence of malignant findings. Once an adnexal cyst demonstrates sonographic features indicating a negligible risk of malignancy, imaging follow-up may still be reasonable for those cysts large enough to merit surveillance to distinguish a growing benign neoplasm from a nonneoplastic cyst. However, it is also reasonable to rely on clinical follow-up alone (patient symptoms and physical examination) once a cyst has been well-characterized as simple, with US follow-up used as the clinician feels indicated. A thorough patient assessment is required to make specific recommendations for surgical intervention based on careful review of a patient's symptoms, age, medical profile, and US findings [4].

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An example of the O-RADS system is outlined as follows [1]:

O-RADS Score	Risk Category [IOTA Model]	Lexicon Descriptors		Management	
				Pre-menopausal	Post-Menopausal
0	Incomplete Evaluation [N/A]	Lesion features relevant for risk stratification cannot be accurately characterized due to technical factors		Repeat US study or MRI	
1	Normal Ovary [N/A]	No ovarian lesion		None	
		Physiologic cyst: follicle (≤3 cm) or corpus luteum (typically ≤3 cm)			
2	Almost Certainly Benign [<1%]	Simple cyst	≤3 cm	N/A (see follicle)	None
			>3 cm to 5 cm	None	Follow-up US in 12 months*
			>5 cm but <10 cm	Follow-up US in 12 months*	
		Unilocular, smooth, non–simple cyst (internal echoes and/or incomplete septations) – – – – – – – – – – – – – – – Bilocular, smooth cyst	≤3 cm	None	Follow-up US in 12 months*
			>3 cm but <10 cm	Follow-up US in 6 months*	
		Typical benign ovarian lesion (see "Classic Benign Lesions" table)	<10 cm	See "Classic Benign Lesions" table for descriptors and management	
		Typical benign extraovarian lesion (see "Classic Benign Lesions" table)	Any size		
3	Low Risk [1 – <10%]	Typical benign ovarian lesion (see "Classic Benign Lesions" table), ≥10 cm		Imaging: • If not surgically excised, consider follow-up US within 6 months** • If solid, may consider US specialist (if available) *or* MRI (with O-RADS MRI score)† Clinical: Gynecologist	
		Uni- or bilocular cyst, smooth, ≥10 cm			
		Unilocular cyst, irregular, any size			
		Multilocular cyst, smooth, <10 cm, CS <4			
		Solid lesion, ± shadowing, smooth, any size, CS = 1			
		Solid lesion, shadowing, smooth, any size, CS 2–3			
4	Intermediate Risk [10 – <50%]	Bilocular cyst without solid component(s)	Irregular, any size, any CS	Imaging: Options include: • US specialist (if available) *or* • MRI (with O–RADS MRI score)† *or* • Per gyn–oncologist protocol Clinical: Gynecologist with gyn–oncologist consultation *or* solely by gyn–oncologist	
		Multilocular cyst without solid component(s)	Smooth, ≥10 cm, CS <4		
			Smooth, any size, CS 4		
			Irregular, any size, any CS		
		Unilocular cyst with solid component(s)	<4 pps or solid component(s) not considered a pp; any size		
		Bi- or multilocular cyst with solid component(s)	Any size, CS 1–2		
		Solid lesion, non-shadowing	Smooth, any size, CS 2–3		
5	High Risk [≥50%]	Unilocular cyst, ≥4 pps, any size, any CS		Imaging: Per gyn-oncologist protocol Clinical: Gyn-oncologist	
		Bi- or multilocular cyst with solid component(s), any size, CS 3–4			
		Solid lesion, ± shadowing, smooth, any size, CS 4			
		Solid lesion, irregular, any size, any CS			
		Ascites and/or peritoneal nodules††			

GLOSSARY

Smooth and irregular: refer to **inner** walls/septation(s) for **cystic** lesions, and **outer** contour for **solid** lesions; irregular inner wall for cysts = <3 mm in height	Solid: excludes blood products and dermoid contents; solid lesion = ≥80% solid; solid component = protrudes ≥3 mm (height) into cyst lumen off wall or septation
Shadowing: must be diffuse or broad to qualify; excludes refractive artifact	pp = papillary projection; subtype of solid component surrounded by fluid on 3 sides
CS = color score; degree of intralesional vascularity; 1 = none, 2 = minimal flow, 3 = moderate flow, 4 = very strong flow	Bilocular = 2 locules; multilocular = ≥3 locules; bilocular smooth cysts have a lower risk of malignancy, regardless of size or CS
Postmenopausal = ≥1 year amenorrhea (early: <5 yrs; late: ≥5 yrs); if uncertain or uterus surgically absent, use age >50 years (early = >50 yrs but <55 yrs, late = ≥55 yrs)	

*Shorter imaging follow-up may be considered in some scenarios (eg, clinical factors). If smaller (≥10–15% decrease in average linear dimension), no further surveillance. If stable, follow-up US at 24 months from initial exam. If enlarging (≥10–15% increase in average linear dimension), consider follow-up US at 12 and 24 months from initial exam, then management per gynecology. For changing morphology, reassess using lexicon descriptors. **Clinical management with gynecology as needed**.

**There is a paucity of evidence for defining the optimal duration or interval for imaging surveillance. Shorter follow-up may be considered in some scenarios (eg, clinical factors). If stable, follow-up at 12 and 24 months from initial exam, then as clinically indicated. For changing morphology, reassess using lexicon descriptors.

† MRI with contrast has higher specificity for solid lesions, and cystic lesions with solid component(s).

†† Not due to other malignant or non-malignant etiologies; specifically, must consider other etiologies of ascites in categories 1–2.

No current MIPS measure addresses this need for effective description of ovarian/adnexal lesions and subsequent management. Without appropriate upfront lesion management recommendations by radiologists as provided by O-RADS, studies have shown that downstream consumption of resources tends to increase and create a wide variability in care [3]. In this way, use of this measure will decrease health care expenditures and result in cost savings to the US health system [3] as well as potentially lead to improved patient outcomes.

MEASURE TESTING AND GAP ANALYSIS:

200 ultrasound reports for findings of ovarian mass were reviewed. Findings were stratified by age, positive or negative findings, and whether a recommendation was made or not. Below are details of the gap analysis.

Table 1 shows the overall findings. In premenopausal women (under 50 years of age) there were 58 positive findings of ovarian masses/cysts. Of those 25 (43%) did not include a recommendation. Furthermore, of the ones that did include recommendations, the recommendations were quite inconsistent as demonstrated in **Table 2** below.

In postmenopausal women (50 years and older) there were 103 positive finding of ovarian masses/cysts and, of those, 94 (91%) did not include a recommendation.

Table 1

Findings	# Found	Age
16 no ovarian mass	16	under 50
25 ovarian masses w/o recommendations	25	under 50
33 ovarian masses w/recommendations	33	under 50
23 no ovarian mass	23	50 +
94 ovarian masses w/o recommendation	94	50 +
9 ovarian masses w/recommendations	9	50 +
Total	200	All Ages

Table 2 shows the inconsistency in recommendations for the premenopausal group. Small findings such as those in premenopausal patients are fairly common and most certainly benign, therefore, typically should not lead to follow-up imaging.

Actual Recommendation	Size (cm)	Age	Recommendation had O-RADS been used
3 month follow-up recommended	1.9	20	No follow-up
Follow-up pelvic US recommended in 6-12 weeks to document stability vs resolution	2.2	32	No follow-up
Follow-up US after 6 weeks may confirm that it has resolved or that it is smaller	2.2	38	No follow-up

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Follow-up as clinically recommended	2.5*	35	No-follow-up
Follow-up transabdominal and endovaginal pelvic US in 6 weeks recommended to assure stability or resolution	2.7	43	No follow-up
Consider follow-up sonography in 4 to 6 weeks	2.7	43	No follow-up
Consider 6 week follow-up for further evaluation	2.8	30	No follow-up
Follow-up US after menses is suggested	3.1	49	No follow-up unless non-simple cyst
6 week US follow-up recommended	3.2	35	No follow-up unless non-simple cyst
Follow-up pelvic ultrasound 2-3 months recommended to reevaluate	3.2	33	No follow-up unless non-simple cyst

**There was an abd/transvag US 1 day earlier without any recommendation at all for this patient*

References:

1. Strachowski, L. M., Jha, P., Phillips, C. H., Blanchette Porter, M. M., Froyman, W., Glanc, P., Guo, Y., Patel, M. D., Reinhold, C., Suh-Burgmann, E. J., Timmerman, D., Andreotti, R. F., et al. (2023, September). O-RADS US v2022: An Update from the American College of Radiology's Ovarian-Adnexal Reporting and Data System US Committee. *Radiology*, 308(3), e230685. doi: https://doi.org/10.1148/radiol.230685.
2. Andreotti RF, Timmerman D, Benacerraf BR, Bennett GL, Bourne T, Brown DL, Coleman BG, Frates MC, Froyman W, Goldstein SR, Hamper UM, Horrow MM, Hernanz-Schulman M, Reinhold C, Strachowski LM, Glanc P. Ovarian-Adnexal Reporting Lexicon for Ultrasound: A White Paper of the ACR Ovarian-Adnexal Reporting and Data System Committee. J Am Coll Radiol. 2018 Oct;15(10):1415-1429. doi: https://doi.org/10.1016/j.jacr.2018.07.004.
3. Rosenkrantz AB, Xue X, Gyftopoulos S, Kim DC, Nicola GN. Variation in Downstream Relative Costs Associated With Incidental Ovarian Cysts on Ultrasound. J Am Coll Radiol. 2018 Jul;15(7):958-963.e1. doi: https://doi.org/10.1016/j.jacr.2018.03.005.
4. Levine D, Patel MD, Suh-Burgmann EJ, Andreotti RF, Benacerraf BR, Benson CB, Brewster WR, Coleman BG, Doubilet PM, Goldstein SR, Hamper UM, Hecht JL, Horrow MM, Hur HC, Marnach ML, Pavlik E, Platt LD, Puscheck E, Smith-Bindman R, Brown DL. Simple Adnexal Cysts: SRU Consensus Conference Update on Follow-up and Reporting. Radiology. 2019 Nov;293(2):359-371. doi: https://doi.org/10.1148/radiol.2019191354.
5. Cao L, Wei M, Liu Y, Fu J, Zhang H, Huang J, Pei X, Zhou J. Validation of American College of Radiology Ovarian-Adnexal Reporting and Data System Ultrasound (O-RADS US): Analysis on 1054 adnexal masses. Gynecol Oncol. 2021 Jul;162(1):107-112. doi: https://doi.org/10.1016/j.ygyno.2021.04.031.

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Meaningful Measure Area: Appropriate Use of Healthcare
NQS Domain: Communication and Care Coordination
Measure Type: Process – High Priority
Data Source: Registry; RIS/VR System; Contracted third party data capture systems
Care Setting(s): Ambulatory; Ambulatory Care: Hospital; Ambulatory Care: Clinician Office/Clinic; Ambulatory Care: Urgent Care; Ambulatory Surgical Center; Emergency Department and Services; Hospital; Hospital Inpatient; Hospital Outpatient; Imaging Facility; Outpatient Services
Measure Stewards: MSN Healthcare Solutions, LLC
Number of Performance Rates: 1
Inverse Measure: No
High Priority Measure: Yes – Care Coordination
Telehealth Measure: No
Proportion Measure Scoring: Yes
Continuous Measure Scoring: No
Ratio Measure Scoring: No
MIPS Reporting Option(s): Traditional MIPS; MVP
Risk adjustment: No
NQF Number: Not applicable
eCQM Number: Not applicable

SAMPLE CALCULATIONS:

Data Completeness =
Performance Met (a=40 procedures) + Numerator Exclusion (b=20 procedures) + Performance Not Met (b=40 procedures) = 100 procedures = **100.00%**
Eligible Population / Denominator (c=100 procedures) = 100 procedures

Performance Rate =
Performance Met (a=40 procedures) = 40 procedures = **50.00%**
Data Completeness Numerator (100 procedures) – Numerator Exclusion (20 procedures) = 80 procedures

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Quality ID #QMM18: Use of Breast Cancer Risk Score on Mammography
- **National Quality Strategy Domain: Patient Safety**
- **Meaningful Measure Area: Communication and Care Coordination**

2026 COLLECTION TYPE:
QUALIFIED CLINICAL DATA REGISTRY QUALITY MEASURE (QCDR)

MEASURE TYPE:
Process – High Priority

DESCRIPTION:
The percentage of final reports for screening mammograms which include the patient's estimated numeric risk assessment based on a validated and published model*, and appropriate recommendations for supplemental screening based on the patient's estimated risk, and documentation of the source of recommendation.

**Must be a one of the models listed in the Numerator Instructions below.*

INSTRUCTIONS:
This measure is to be submitted **each time** a screening mammogram is performed for all patients during the performance period.

Measure Submission Type:
Measure data may only be submitted by the measure steward or third-party-intermediaries possessing licensing rights from the measure steward. The listed denominator criteria are used to identify the intended patient population. The numerator options included in this specification are used to submit the quality actions as allowed by the measure.

DENOMINATOR:
All final reports for screening mammogram.

Denominator Criteria (Eligible Cases):
All patients, regardless of age,
AND
Patient procedure during the performance period (CPT): 77067
AND
Screening mammogram for malignant neoplasm of breast (ICD-10-CM): Z12.31

Denominator Exclusion(s):
Patients with an active diagnosis of breast cancer or history of breast cancer **(DE018)**
OR
Screening mammogram assigned a BIRADS 0: Incomplete **(DE018)**
OR

Women who have a history of mastectomy **(DE018)**

NUMERATOR:
Final reports for screening mammograms that include a documented calculated risk assessment number based on one of the validated and published models from the list below AND appropriate recommendation(s) for supplemental screening based on the patient's estimated risk AND source of recommendation***** (Tyrer-Cuzick, Modified Gail, etc.).

Numerator Note:
- *Validated and Published Models – All eligible exams must include an estimated risk number based on one of the following validated and published models for breast cancer risk estimation:*
  - *Gail (aka, Modified Gail), or*
  - *BRCAPRO, or*
  - *Tyrer-Cuzick (IBIS Tool), or*
  - *Breast Cancer Surveillance Consortium (BCSC), or*
  - *National Cancer Institute's Breast Cancer Risk Assessment Tool, or*
  - *Claus model, or*
  - *Myriad (myRisk Management Tool) – https://myriad.com/myrisk/documents-and-forms*
- *Use of a risk model, not on the list above, will be considered inappropriate for this measure.*
- *Appropriate Recommendations – Recommendations should be appropriately based on the patient's estimated risk number for breast cancer. For example, for patients who are estimated to be high-risk, appropriate recommendations could include, but are not limited to, supplemental screening exams such as screening breast MRI.*

Numerator Options:
Performance Met:
PM018: Final report includes a documented calculated risk assessment number based on one of the validated and published models listed in the numerator instructions AND appropriate recommendations for supplemental screening based on the patient's estimated risk AND source of recommendation.

OR

Performance Not Met:
PNM18: Final report does not include a documented calculated risk assessment number based on a validated and published model, AND/OR if the patient is at risk, final report does not include appropriate recommendations for supplemental screening based on the patient's estimated risk, AND/OR source not cited, reason not given.

OR

Denominator Exception:
PDE18: Documentation of medical reason(s) for not documenting calculated risk assessment, such as patients with a limited life expectancy.

OR

PDE18: Documentation of patient reason(s) for not documenting calculated risk assessment number, such as patient's age is outside the age parameters employed by the validated and published model being used (e.g., patient is less than 35 or greater than 85 years of age if using

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the Gail (aka, Modified Gail) model) (must cite model), or patient is transgender and model does not take into account transgender patients (must cite model).

RATIONALE:

Screening is of greatest value for patients who are most likely to develop breast cancer and for whom early treatment is more effective than later treatment in reducing mortality. Thus, it is important to determine a patient's risk of developing breast cancer and use that information both to recommend the modality and frequency of screening and also to determine whether referrals are needed for genetic testing and for consideration of chemoprevention and/or prophylactic surgery [4].

Contrast-enhanced breast MRI (i.e., breast MRI, with and without gadolinium-based contrast; hereafter MRI) is known to increase cancer detection in higher-risk women and is more sensitive than either mammography or ultrasound in high-risk populations. Recommendations have been established supporting the use of MRI in women with genetics-based increased risk and their untested first-degree relatives, women who received chest radiation therapy before age 30, and women with a calculated risk of 20% or more. Data continue to accumulate to support these recommendations, as well as some refinements to them [2].

CLINICAL RECOMMENDATION STATEMENT(S):

American Cancer Society (ACS):

Women who are at high risk for breast cancer based on certain factors should get a breast MRI and a mammogram every year, typically starting at age 30. This includes women who: Have a lifetime risk of breast cancer of about 20% to 25% or greater, according to risk assessment tools that are based mainly on family history.

If MRI is used, it should be in addition to, not instead of, a screening mammogram. This is because although an MRI is more likely to detect cancer than a mammogram, it may still miss some cancers that a mammogram would detect. Most women at high risk should begin screening with MRI and mammograms when they are 30 and continue for as long as they are in good health [3].

American Society of Breast Surgeons (ASBrS):

The ASBrS recommends annual MRI screening in the following patients, compliant with NCCN Guidelines: Women with a 20%-25% or greater estimated lifetime risk of breast cancer primarily based on mathematical models that are mostly based on family history such as the Claus, BRCAPRO, BOADICEA, and Tyrer-Cuzick models [1].

American College of Radiology (ACR) and Society of Breast Imaging (SBI):

For women with genetics-based increased risk (and their untested first-degree relatives), history of chest radiation (cumulative dose of 10 Gy before age 30), or with a calculated lifetime risk of 20% or more, breast MRI should be performed annually beginning at age 25 to 30 [2].

MEASURE TESTING AND GAP ANALYSIS:

200 reports were reviewed to assess the rate of recorded risk assessments and documentation of appropriate follow-up. Of the sample reviewed, a recorded calculated risk assessment was

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documented in 25 records (12.5% of 200 total records). Follow-up recommendations were documented in 5 out of the documented 25 records (2.5% of 200 total records).

References:

1. The American Society of Breast Surgeons. Consensus guideline on diagnostic and screening magnetic resonance imaging of the breast. Breastsurgeons.org. 2017 Jun 22. https://www.breastsurgeons.org/resources/statements.
2. Monticciolo DL, Newell MS, Moy L, Niell B, Monsees B, Sickles EA. Breast Cancer Screening in Women at Higher-Than-Average Risk: Recommendations From the ACR. J Am Coll Radiol. 2018 Mar;15(3 Pt A):408-414. doi: https://doi.org/10.1016/j.jacr.2017.11.034.
3. The American Cancer Society. American Cancer Society recommendations for the early detection of breast cancer: American Cancer Society screening recommendations for women at high risk. Cancer.org. 2022 Jan 14. https://www.cancer.org/cancer/breast-cancer/screening-tests-and-early-detection/american-cancer-society-recommendations-for-the-early-detection-of-breast-cancer.html.
4. Elmore JG, Lee CI. Screening for breast cancer: Strategies and recommendations. Uptodate.com. 2021 Apr 20. https://www.uptodate.com/contents/screening-for-breast-cancer-strategies-and-recommendations#.

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Meaningful Measure Area: Communication and Care Coordination
NQS Domain: Patient Safety
Measure Type: Process
Data Source: Registry; RIS/VR System; Contracted third party data capture systems
Care Setting(s): Ambulatory; Ambulatory Care: Hospital; Hospital; Hospital Inpatient; Hospital Outpatient; Imaging Facility; Outpatient Services
Measure Stewards: MSN Healthcare Solutions, LLC
Number of Performance Rates: 1
Inverse Measure: No
High Priority Measure: Yes – Care Coordination
Telehealth Measure: No
Proportion Measure Scoring: Yes
Continuous Measure Scoring: No
Ratio Measure Scoring: No
MIPS Reporting Option(s): Traditional MIPS; MVP
Risk adjustment: No
NQF Number: Not applicable
eCQM Number: Not applicable

SAMPLE CALCULATIONS:

Data Completeness =

$$\frac{\text{Performance Met (a=40 procedures) + Numerator Exclusion (b=20 procedures) + Performance Not Met (b=40 procedures)}}{\text{Eligible Population / Denominator (c=100 procedures)}} = \frac{\text{100 procedures}}{\text{= 100 procedures}} = \textbf{100.00\%}$$

Performance Rate =

$$\frac{\text{Performance Met (a=40 procedures)}}{\text{Data Completeness Numerator (100 procedures) – Numerator Exclusion (20 procedures)}} = \frac{\text{40 procedures}}{\text{= 80 procedures}} = \textbf{50.00\%}$$

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Quality ID #QMM23: Low Dose Cancer Screening Recommendation for CT of Chest with Diagnosis of Emphysema

- **National Quality Strategy Domain: Community/Population Health**
- **Meaningful Measure Area: Preventive Care**

2026 COLLECTION TYPE:
QUALIFIED CLINICAL DATA REGISTRY QUALITY MEASURE (QCDR)

MEASURE TYPE:
Process – High Priority

DESCRIPTION:
Percentage of emphysema patients, 50-80 years of age at time of service, who undergo a CT/CTA of the chest in which the Final Report:

- Mentions that the presence of pulmonary emphysema on CT is an independent risk factor for lung cancer, AND
- Includes a recommendation to consider the patient for low dose CT (LDCT) lung cancer screening in the future (current chest CT serves as baseline).

INSTRUCTIONS:
This measure is to be submitted **each time** an eligible patient receives a CT/CTA of the chest. Low dose cancer screening is recommended to screen patients with risk factors, such as emphysema.

Measure Submission Type:
Measure data may only be submitted by the measure steward or third-party-intermediaries possessing licensing rights from the measure steward. The listed denominator criteria are used to identify the intended patient population. The numerator options included in this specification are used to submit the quality actions as allowed by the measure.

DENOMINATOR:
All final reports for CT/CTA of the chest.

Denominator Criteria (Eligible Cases):
All patients, 50 to 80 years of age at time of service,
AND
Patient procedure during the performance period (CPT):
71250 – CT, thorax w/out contrast
71260 – CT, thorax w/ contrast
71270 – CT, thorax w/ and w/o contrast
71275 – CTA of chest
AND
Diagnosis of emphysema (ICD-10-CM): J43.0, J43.1, J43.2, J43.8, J43.9

Denominator Exclusion(s):
Active diagnosis or history of Lung Cancer **(DE023)**
OR
Patient is enrolled in a lung cancer screening program **(DE123)**

NUMERATOR:
Final reports for patients diagnosed with emphysema that include documentation indicating patient should be evaluated for entry into low dose lung cancer screening protocol with reference to pulmonary emphysema on CT as an independent risk factor for lung cancer.

Numerator Options:
Performance Met:
PM023: Final report includes all of the following:
- Statement that the presence of pulmonary emphysema on CT is an independent risk factor for lung cancer, AND
- A recommendation to consider the patient for low dose CT (LDCT) lung cancer screening in the future (current chest CT serves as baseline).

OR

Performance Not Met:
PNM23: Final report does not include all of the following:
- Statement that the presence of pulmonary emphysema on CT is an independent risk factor for lung cancer, AND
- A recommendation to consider the patient for low dose CT (LDCT) lung cancer screening in the future (current chest CT serves as baseline).

OR

Denominator Exception:
PE023: Documentation of clinical reason(s) why final report does not include documentation recommending patient be evaluated for low dose lung cancer screening (such as, patient in hospice, patient in end-of-life care, documented finding of pulmonary nodule or lung mass, provider documentation that patient currently receives chest CT scans on a routine basis, etc.).

RATIONALE:
Lung Cancer kills more people in the U.S. than any other form of cancer; more than breast and colorectal cancer combined [11,17]. The five-year survival rate of lung cancer (18.6%) is significantly lower than other leading forms of cancer, such as colorectal (64.5 percent), breast (89.6 percent) and prostate (98.2 percent). Early detection of lung cancer (before spread to other organs), dramatically increases the five-year survival rate from 5% to 56%; yet only 16% of lung cancer cases are diagnosed early (still localized within the lungs) [10].

The United States Preventive Services Task Force (USPSTF) issued its final recommendation for annual lung cancer screening of current and former heavy smokers between the ages of 55 and 80 years back in 2014 and updated it in 2021 to include heavy smokers aged 50 to 54 [5,12]. The National Comprehensive Cancer Network (NCCN), the American Cancer Society (ACS), and other professional

organizations also recommend screening for lung cancer with LDCT, however, the majority of eligible patients that could benefit from such preventative care remain unscreened [2,5,6,7,8].

A number of professional societies have endorsed the use of the NLST inclusion criteria as minimum or sufficient criteria for consideration of lung cancer screening. However, several researchers have proposed that a more refined risk assessment, which would account for additional risk information not considered in the NLST entry criteria, could improve the selection process for lung-cancer screening [15].

Emphysema have been proposed as an important risk factor for developing lung cancer in a lung cancer screening setting. However, it has been neglected by current guidelines identifying the target population that should undergo screening [14].

In a 2008 study on 3,638 high-risk subjects, it was found that both COPD as measured by GOLD I–IV and emphysema assessed semi-quantitatively with the CT scan are independently related to lung cancer in a high-risk population, and that lung cancer occurs most frequently in patients with both COPD and emphysema [13].

In another study, completed in 2015, of 6,699 individuals in two different, geographically disparate lung cancer screening groups, it was found that limiting annual screening to individuals with emphysema found on baseline LDCT showed the highest lung cancer incidence densities (cases per 1,000 person-years) and detection rates, and hence, the lowest number of people needed to be screened in a year to detect one lung cancer. (However, the highest absolute lung cancer counts were observed in subjects who either met NLST entry criteria and/or had emphysema on baseline LDCT. By using these criteria, 88% and 95% of incident lung cancers could be detected in the two different groups despite screening 48% and 27% fewer participants, respectively) [14].

In a 2012 meta-analysis, three studies assessing emphysema visually on CT observed an association with lung cancer, independent of smoking history and airflow obstruction [16].

Given emphysema is an independent risk factor of death, including subjects with emphysema in lung cancer screening, not only provides the benefit of increased lung cancer detection, but can also add the benefit from smoking cessation efforts and therapies to limit the progression of emphysema and/or COPD [14].

Radiologists can play an active role in improving lung cancer screening rates by helping providers identify patients that meet the requirements of such an important preventative screening. By providing a recommendation within their final report for the ordering provider to evaluate patients that fall within the target population of LDCS, Radiologists can act as a safety net to catch patients that may have otherwise not been identified for screening services.

GAP ANALYSIS:

A study completed in 2020, using The American College of Radiology's Lung Cancer Screening Registry shows that nationally, less than 5% of eligible adults received a lung cancer screening. The study concludes that, "annual LDCT screening remains inadequate following USPSTF recommendations

despite the time since implementation and potential to prevent thousands of lung cancer deaths each year. It remains unclear why the lung cancer screening rate is dramatically lower than other cancer screening modalities such as mammography and colonoscopy. Further initiatives are needed including awareness programs and mandating lung cancer screening as a national quality measure" [3].

Table 1. LDCT screens performed in 2016 compared to eligible smokers per USPSTF criteria [3].

U.S. Census Region	No. of Accredited Centers	Estimated Eligible Smokers	LDCT Screens	Rate (%)
Northeast	404	1,152,141	40,105	3.5
Midwest	497	2,020,045	38,931	1.9
South	663	3,072,095	47,966	1.6
West	232	1,368,694	14,080	1.0
Total	**1796**	**7,612,975**	**141,260**	**1.9**

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ECONOMIC ANALYSIS:

The National Institutes of Health (NIH) estimates the cost to care for lung cancer patients in the U.S. totals $13.4 billion. Add to that the lost productivity due to early death from lung cancer, brings the total economic burden of Lung Cancer in the US to $49.5 billion [9].

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Meaningful Measure Area: Preventative Care
NQS Domain: Community/Population Health
Measure Type: Process
Data Source: Registry; RIS/VR System; Contracted third party data capture systems
Care Setting(s): Ambulatory; Ambulatory Care: Hospital; Emergency Department and Services; Hospital; Hospital Inpatient; Hospital Outpatient; Imaging Facility; Outpatient Services
Measure Stewards: MSN Healthcare Solutions, LLC
Number of Performance Rates: 1
Inverse Measure: No
High Priority Measure: Yes – Care Coordination
Telehealth Measure: No
Proportion Measure Scoring: Yes
Continuous Measure Scoring: No
Ratio Measure Scoring: No
MIPS Reporting Option(s): Traditional MIPS
Risk adjustment: No
NQF Number: Not applicable
eCQM Number: Not applicable

SAMPLE CALCULATIONS:

Data Completeness =

$$\frac{\text{Performance Met (a=40 procedures) + Numerator Exclusion (b=20 procedures) + Performance Not Met (b=40 procedures)}}{\text{Eligible Population / Denominator (c=100 procedures)}} = \frac{100 \text{ procedures}}{= 100 \text{ procedures}} = \mathbf{100.00\%}$$

Performance Rate =

$$\frac{\text{Performance Met (a=40 procedures)}}{\text{Data Completeness Numerator (100 procedures) – Numerator Exclusion (20 procedures)}} = \frac{40 \text{ procedures}}{= 80 \text{ procedures}} = \mathbf{50.00\%}$$

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Quality ID #QMM26: Screening Abdominal Aortic Aneurysm Reporting with Recommendations
- **National Quality Strategy Domain: Effective Clinical Care**
- **Meaningful Measure Area: Management of Chronic Conditions**

2026 COLLECTION TYPE:
QUALIFIED CLINICAL DATA REGISTRY QUALITY MEASURE (QCDR)

MEASURE TYPE:
Process – High Priority

DESCRIPTION:
Percentage of patients, 50 years of age and older, undergoing a screening ultrasound for abdominal aortic aneurysm (AAA) that have recognized clinical follow-up recommendations documented in the final report and direct communication of AAA findings > 5.5 cm in size made to the ordering provider. This population encompasses those 50 years of age and older not covered by Medicare as well as the Medicare one-time coverage for a screening ultrasound for AAA. For non-Medicare patients, the screening ultrasound may be elective and not covered by insurance. For Medicare patients, the following criteria must be met to be considered for coverage:

Medicare Criteria – Ultrasound Screening for Abdominal Aortic Aneurysm (AAA)
Centers for Medicare & Medicaid Services (CMS) Internet-Only Manual (IOM) Publication 100-04, *Medicare Claims Processing Manual*, Chapter 18, Section 110
Payment may be made for a one-time ultrasound screening for AAA for beneficiaries who meet the following criteria:

1) receives a referral for such an ultrasound screening from the beneficiary's attending physician, physician assistant, nurse practitioner or clinical nurse specialist;
2) receives such ultrasound screening from a provider or supplier who is authorized to provide covered ultrasound diagnostic services;
3) has not been previously furnished such an ultrasound screening under the Medicare Program; and
4) is included in at least one of the following risk categories—
    (i) has a family history of abdominal aortic aneurysm;
    (ii) is a man age 65 to 75 who has smoked at least 100 cigarettes in his lifetime; or
    (iii) is a beneficiary who manifests other risk factors in a beneficiary category recommended for screening by the United States Preventive Services Task Force regarding AAA, as specified by the Secretary of Health and Human Services, through the national coverage determination process.

INSTRUCTIONS:
This measure is to be submitted **each time** a patient 50 years of age or older has a screening ultrasound for an abdominal aortic aneurysm (AAA) during the performance period.

Measure Submission Type:

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Measure data may only be submitted by the measure steward or third-party-intermediaries possessing licensing rights from the measure steward. The listed denominator criteria are used to identify the intended patient population. The numerator options included in this specification are used to submit the quality actions as allowed by the measure.

DENOMINATOR:
All final reports for patients 50 years of age and older undergoing screening ultrasound for AAA.

***Denominator Note:** *This Category I code may be a non-covered service under the Medicare Part B Physician Fee Schedule (PFS) for this encounter. These non-covered services should be counted in the denominator population for MIPS CQMs.*

Denominator Criteria (Eligible Cases):
All patients, 50 years of age and older,
AND
Patient procedure during the performance period (CPT): 76706*

Denominator Exclusion(s): None

NUMERATOR:
All final reports for screening ultrasound for AAA that include recommendations in accordance with the Society of Vascular Surgery (SVS) Practice Criteria for AAA (https://doi.org/10.1016/J.JVS.2017.10.044) or similar published guidelines **if positive for AAA** AND direct communication is made to the ordering provider for AAA findings ≥ 5.5 cm in size OR a clear statement that no future screenings are necessary/recommended **if negative for AAA***.

Definitions:
Direct Communication: A form of communication that is in addition to, and more immediate than, the documentation in the Final Ultrasound Report. This could include: a phone call, entry into a critical-results reporting system, or other means.

Negative for AAA: Radiology report indicates that no signs of an abdominal aortic aneurysm (AAA) were detected during the screening. This means that the abdominal aorta appears normal and does not show any enlargement or abnormal dilation that would suggest the presence of an AAA.

Numerator Note:
- *A reference to the source of the standardized, published recommendation guidance should be documented in the Final Report (such as "recommendation made in accordance with Society of Vascular Surgery Practice Criteria for AAAs").*
- *When no follow-up is recommended (e.g., for AAAs <2.5 cm in size or no AAA), "No follow-up" should be explicitly documented in the Final Report (such as, "No follow-up imaging is recommended per the Society of Vascular Surgery Practice Criteria for AAAs").*
- *Example of Appropriate follow-up recommendations per Society of Vascular Surgery Guidelines* are as follows:*

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Impression	Recommendation
< 2.6 cm	No follow up necessary
2.6-2.9 cm	US rescreening after 10 years
3.0 cm to 3.9 cm	US follow up every 3 years
4.0 cm to 4.9 cm	US follow up every 12 months
5.0 cm to 5.4 cm	US follow up every 6 months, vascular surgery consult
≥ 5.5 cm	Referral to vascular surgeon

**Based upon The Society for Vascular Surgery practice guidelines on the care of patients with an abdominal aortic aneurysm. Journal of vascular surgery. 2018 Jan 1; 67(1):2 -77 [3] (originally published 2003 May 1;37(5):1106-17, updated 2009 Oct 1;50(4):S2-49).*

Numerator Options:

Performance Met:

PM002: For AAA finding < 5.5 cm in size – Final report includes recommendation for follow-up of abdominal aortic aneurysm (or recommendation of "no follow-up") according to Society of Vascular Surgery Practice Criteria or similar published guidelines (source must be cited) for all positive findings for AAA < 5.5 cm (such as, follow-up ultrasound imaging studies needed or referral to specialist).

OR

PM102: For AAA finding ≥ 5.5 cm in size – Final report includes recommendation for follow-up of abdominal aortic aneurysm according to Society of Vascular Surgery Practice Criteria or similar published guidelines (source must be cited) (such as, follow-up ultrasound imaging studies needed or referral to specialist) AND direct communication of AAA findings and recommendation is made to the ordering provider and documented in the final report.

OR

PM202: Negative for AAA (no AAA finding) – Final report includes a clear statement that no future screenings are necessary/recommended.

OR

Performance Not Met:

PNM02: Final report does not include recommendation for follow-up of abdominal aortic aneurysm (or recommendation of "no follow-up") AND/OR source not cited for positive finding for AAA AND/OR if findings for AAA ≥ 5.5 cm, final report does not include documentation of direct communication, OR if screening is negative for AAA, final report does not include a clear statement that no future screenings are necessary/recommended.

OR

Denominator Exception:

PE002: Documentation that the patient is under active surveillance by a vascular specialist and there is no change in the AAA from prior study.

OR

PE102: Documentation that screening study was incomplete (e.g., a portion of the AAA is not well-visualized due to overlying bowel gas).

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RATIONALE:
Observing recognized clinical guidelines for appropriate follow-up minimizes mortality risk, optimizes care, and reduces unnecessary imaging. Verification of no abdominal aortic aneurysm should result in no further imaging or screenings. Conversely, when an abdominal aortic aneurysm is detected, it requires appropriate follow-up for adequate management. Follow-up recommendation guidelines allow clinicians to appropriately treat patients, with active surveillance and intervention when indicated, or no follow-up when indicated. There are well defined follow-up criteria developed by the Society for Vascular Surgery in 2009, revised 2018. Abdominal aortic aneurysms can clearly progress over time, and mortality is nearly 100% with acute rupture. **Rupture is the biggest threat posed by an aneurysm. In the United States, ruptured aneurysms are the 10th-leading cause of death of men over the age of 50. Women are also at risk.** Aneurysms that have been discovered prior to rupture need to be measured, closely monitored and evaluated for treatment. Small aneurysms, those less than five centimeters in diameter, can often be left untreated, yet observed periodically to check for changes.

Appropriate intervention at the appropriate time is very low risk, and significantly decreases morbidity and mortality. Radiologists can play an instrumental role guiding appropriate follow-up of these patients and should do so in a concise and consistent format **with recognized, standard practice guidelines.**

Medicare Part B covers a one-time abdominal aortic aneurysm screening ultrasound if a beneficiary is at risk for AAA and obtains a referral. This screening ultrasound is not applicable to patients under 65 (except for disabled and ESRD patients covered by Medicare) nor does it not specify the actions that the clinician should take upon discovery of the AAA. Any additional follow-up screening exams are not covered if an AAA is not detected. At this time Medicare does not require the interpreting physician to determine the findings and give recommendations based on recognized standard medical practice guidelines.

The risk of rupture of small aneurysms (smaller than 4.0 centimeters) is much lower than the risk of rupture of large aneurysms (larger than 6.0 centimeters). In addition to size, the risk of AAA rupture depends upon the rate at which the aneurysm is expanding. The evidence suggests that aneurysms expand at an average rate of 0.3 to 0.4 centimeters per year (1 inch = 2.5 cm). Larger aneurysms tend to expand faster than smaller aneurysms.

Per a report of a subcommittee of the Joint Council of the American Association for Vascular Surgery and Society for Vascular Surgery the annual risk of rupture based upon aneurysm size is estimated as follows:

- Less than 4.0 cm in diameter = less than 1 in 200
- 4.0 to 4.9 cm in diameter = between 1 in 200 and 1 in 20
- 5.0 to 5.9 cm in diameter = between 1 in 30 and 1 in 7
- 6.0 to 6.9 cm in diameter = between 1 in 10 and 2 in 10
- 7.0 to 7.9 cm in diameter = between 2 in 10 and 4 in 10
- 8.0 cm or more in diameter = between 3 in 10 and 5 in 10

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There can be significant variability in the rate of expansion, both from one patient to another, and for a given patient from year to year. Aneurysms that expand rapidly (for example, more than 0.5 cm over six months) may be at higher risk of rupture. Many patients have long periods with little change in aneurysm size. Some aneurysms, for unclear reasons, remain relatively fixed in size for a period of time and then undergo rapid expansion.

Enlargement tends to be more rapid in smokers and less rapid in patients with diabetes mellitus. So far, smoking cessation is the only known way of decreasing aneurysm enlargement.

An abdominal aortic aneurysm is defined as an aortic diameter at least one and one-half times the normal diameter at the level of the renal arteries, which is approximately 2.0 cm. Thus, generally, a segment of abdominal aorta with a diameter of greater than 3.0 cm is considered an aortic aneurysm. Approximately 80% of aortic aneurysms occur between the renal arteries and the aortic bifurcation. Aortic aneurysms constitute the 14th leading cause of death in the United States. Each year in the United States, AAA rupture causes 4,500 deaths, with an additional 1,400 deaths resulting from the 45,000 repair procedures performed to prevent rupture.

The diagnosis of an AAA should ideally be made before the development of clinical symptoms to prevent rupture. Approximately 30% of asymptomatic AAAs are discovered as a pulsatile abdominal mass on routine physical examination. Physical examination may reveal a pulsatile, expansile mass at or above the umbilicus. The vascular examination should include abdominal auscultation because the presence of a bruit may indicate aortic or visceral arterial atherosclerotic disease, or rarely an aortocaval fistula (machinery murmur).

MEASURE TESTING AND GAP ANALYSIS:

MSN coded 5,946 screening ultrasounds for abdominal aneurysm (CPT code 76706 and ICD-10 code Z13.6) in 2019 for dates of service between January 1st and May 28th.

- We reviewed 92 reports from 17 different radiology group practices that had positive findings for abdominal aortic aneurysm.
- There were 60 reports that did not include any recommendations for follow-up procedure(s) while 14 recommended follow-ups with vascular surgery and 18 recommended other imaging follow-up (CTA, CT or US).
- This represents 65% of the sample patient population with positive findings that did not have appropriate recommendations for a condition with a high mortality rate when not properly treated.

Additionally, in a 2017 review presented by a large radiology practice to the American College of Radiology regarding appropriate follow-up of newly diagnosed cases of AAA, 36% of 122 lacked recognized and appropriate follow-up recommendations.

By implementing standardized recommendations, such as those shown in **Table 1** below, the initial results made in this practice showed that about 130 phone calls were made to the referring physicians to ensure that appropriate recommendations were followed and it is expected that this protocol will save 4 lives a year to the patient population of their practice.

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Table 1

Impression	Recommendation
< 2.6 cm	No follow up necessary
2.6-2.9 cm	US rescreening after 10 years
3.0 cm to 3.9 cm	US follow up every 3 years
4.0 cm to 4.9 cm	US follow up every 12 months
5.0 cm to 5.4 cm	US follow up every 6 months, vascular surgery consult
≥ 5.5 cm	Referral to vascular surgeon

**Based upon* *The Society for Vascular Surgery practice guidelines on the care of patients with an abdominal aortic aneurysm. Journal of vascular surgery. 2018 Jan 1; 67(1):2-77 (originally published 2003 May 1;37(5):1106-17, updated 2009 Oct 1;50(4):S2-49.*

Regarding the inclusion of negative findings of AAA in the Numerator, MSN coded the following volume of screening ultrasounds for abdominal aortic aneurysm (CPT code 76706 and ICD-10 code Z13.6) for dates of service between 2017 and 2022, and received the following volume of Maximum Benefit remark codes in response to those screening ultrasound for AAA claims, representing the volume of denied claims due to duplicative screening. The data shows a steady increase in denials due to duplicative screening ultrasound for AAA being ordered. The duplicative screening increases the patient responsibility for payment causing an undue financial burden when clinical data shows there is no need for additional screenings beyond the first negative one in this patient population. Preventing unnecessary additional screenings is just as important as providing follow-up on positive results.

	2022	2021	2020	2019	2018	2017	Total
AAA Screening US Volume	16,403	12,765	8,770	8,911	5,773	4,405	**64,584**
Denial Volume	650	445	309	322	185	141	**2,236**
% Denied Claims	**3.96%**	**3.49%**	**3.52%**	**3.61%**	**3.20%**	**3.20%**	**3.46%**

References:

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Meaningful Measure Area: Management of Chronic Conditions
NQS Domain: Effective Clinical Care
Measure Type: Process
Data Source: Registry; RIS/VR System; Contracted third party data capture systems
Care Setting(s): Hospital; Hospital Outpatient; Hospital Inpatient; Outpatient Services; Ambulatory Care: Hospital
Measure Stewards: MSN Healthcare Solutions, LLC
Number of Performance Rates: 1
Inverse Measure: No
High Priority Measure: Yes – Appropriate Use
Telehealth Measure: No
Proportion Measure Scoring: Yes
Continuous Measure Scoring: No
Ratio Measure Scoring: No
MIPS Reporting Option(s): Traditional MIPS; MVP
Risk adjustment: No
NQF Number: Not applicable
eCQM Number: Not applicable

SAMPLE CALCULATIONS:

Data Completeness =

$$\frac{\text{Performance Met (a=40 procedures) + Numerator Exclusion (b=20 procedures) + Performance Not Met (b=40 procedures)}}{\text{Eligible Population / Denominator (c=100 procedures)}} = \frac{100 \text{ procedures}}{100 \text{ procedures}} = \mathbf{100.00\%}$$

Performance Rate =

$$\frac{\text{Performance Met (a=40 procedures)}}{\text{Data Completeness Numerator (100 procedures) – Numerator Exclusion (20 procedures)}} = \frac{40 \text{ procedures}}{80 \text{ procedures}} = \mathbf{50.00\%}$$

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Quality ID #QMM27: Appropriate Classification and Follow-up Imaging for Incidental Pancreatic Cysts

- **National Quality Strategy Domain: Communication and Care Coordination/Effective Clinical Care**
- **Meaningful Measure Area: Preventive Care**

2026 COLLECTION TYPE:
QUALIFIED CLINICAL DATA REGISTRY QUALITY MEASURE (QCDR)

MEASURE TYPE:
Process – High Priority

DESCRIPTION:
Percentage of final reports for computed tomography/computed tomography angiography (CT/CTA) of the abdomen or abdomen/pelvis or magnetic resonance imaging/magnetic resonance angiography (MRI/MRA) of the abdomen for patients 18 years of age and older with a pancreatic cyst incidentally noted that include documentation of cyst classification/morphology and follow-up imaging recommendation(s) in accordance with published guidelines and source of recommendation.

INSTRUCTIONS:
This measure is to be submitted **each time** a patient undergoes a computed tomography/computed tomography angiography (CT/CTA) of the abdomen or abdomen/pelvis or a magnetic resonance imaging/magnetic resonance angiography (MRI/MRA) of the abdomen with an incidental pancreatic cyst finding during the performance period.

Measure Submission Type:
Measure data may only be submitted by the measure steward or third-party-intermediaries possessing licensing rights from the measure steward. The listed denominator criteria are used to identify the intended patient population. The numerator options included in this specification are used to submit the quality actions as allowed by the measure.

DENOMINATOR:
All final reports for computed tomography/angiography (CT/CTA) of the abdomen or abdomen/pelvis or magnetic resonance imaging/angiography (MRI/MRA) of the abdomen for patients 18 years of age and older with a pancreatic cyst noted incidentally.

Denominator Criteria (Eligible Cases):
All patients, 18 years of age and older at time of service,
AND
Patient procedure during the performance period (CPT): 74150, 74160, 74170, 74174, 74175, 74176, 74177, 74178, 74181, 74182, 74183, 74185
AND
Incidental Pancreatic Cyst **(EE027)**

Denominator Exclusion(s): None

NUMERATOR:
Final reports for CT/CTA of the abdomen or abdomen/pelvis or MRI/MRA of the abdomen with an incidentally noted pancreatic cyst that include documentation of cyst classification/morphology* AND follow-up imaging recommendation(s) in accordance with published guidelines AND source of recommendation(s)*.

***Numerator Note #1:** Validated and Published Guidelines – All eligible exams must include documentation of use of one of the following validated and published guidelines for incidental pancreatic cystic lesions management:*

- *European based guidelines (European)*
- *American College of Gastroenterology (ACG)*
- *American Gastroenterological Association (AGA)*
- *International Association of Pancreatology (IAP)*
- *American College of Radiology (ACR)*

***Numerator Note #2:** Cyst classification/Morphology includes, but is not limited to:*

- *IPMN, SCA, MCN, solid pseudopapillary epithelial neoplasm, cPNET, pseudocyst*
- *Rare cysts: simple epithelial cyst, lymphoepithelial cyst, mucinous non-neoplastic cyst* [1]

Numerator Options:

Performance Met:

PM027: Final report includes documentation of cyst classification/morphology AND follow-up imaging recommendation(s) in accordance with published guidelines AND source of recommendation(s).

OR

Performance Not Met:

PNM27: Final report does not include documentation of cyst classification/morphology AND/OR follow-up imaging recommendation(s) in accordance with published guidelines AND/OR source of recommendation(s).

OR

Denominator Exception:

PE027: Documentation of medical reason(s) for not including documentation of cyst classification/morphology and follow-up imaging recommendation(s) in accordance with published guidelines (such as, patient is at increased risk of pancreatic cancer due to family history, hereditary syndromes associated with increased risk of pancreatic cancer, limited life expectancy, or other situations that fall outside the purview of the published guideline used) (must cite source).

RATIONALE:
Advanced imaging techniques support prevention and early diagnosis of pancreatic cancer. Given the poor prognosis of pancreatic cancer, appropriate management of incidental pancreatic cystic lesions is necessary to improve quality of care, especially given the high rate of potential malignancy of

incidental pancreatic lesions, when compared to other organ sites [3]. Due to their prevalence and uncertain malignant potential, pancreas cysts may be a source of significant angst for both the patients and their provider. Hence, use of guidelines assist in providing clear and consistent clinical decisions with regards to pancreas cyst management and surveillance [4].

MEASURE TESTING AND GAP ANALYSIS:

In a recent retrospective observational study to describe the variation in radiologists' follow-up recommendations for focal cystic pancreatic lesions (FCPLs) after publication of the 2010 ACR incidental findings White Paper, and to determine adherence to ACR guidance, 1,377 reports describing FCPLs were identified in 1,038 patients during 2013. After excluding examinations from low-volume readers (n = 80), it was found that radiologists recommended follow-up imaging in only 13.5% (175/1,297) of cases, a decrease from 2009 when it was recommended in 23.7% (221/933) of cases [6].

In a recent retrospective cohort study of 3,241 eligible imaging studies for patients receiving longitudinal care at a single tertiary care center, 100 patients with newly diagnosed incidental pancreatic cysts eligible for surveillance were identified. A majority (53%) received no follow-up. We identified 4 predictors of cyst surveillance: **radiology report conclusion mentioning the cyst** (odds ratio [OR], 14.9; 95% confidence interval [CI], 1.9–119) **and recommending follow-up** (OR, 5.5; 95% CI, 2.1–13.9), pancreas main duct dilation (OR, 10.7; 95% CI, 1.3–89), and absence of multiple cysts (OR, 2.5; 95% CI, 1.1–10.0) [7].

ECONOMIC ANALYSIS:

Pancreatic cystic neoplasms are one of the most frequent incidental findings in the field of pancreatic diseases, estimated to be present in up to 45% of the general population. They represent a heterogeneous group of tumors with different biological behavior and variable risk of progression to malignancy. While serous cystadenomas (SCAs) have no risk of malignant progression, mucinous cyst adenoma are malignant in 20% of cases and this risk is higher in intraductal papillary mucinous neoplasms (IPMN) [9]. This is why Radiologists play a critical role in the detection and characterization of pancreatic cystic lesions, in the follow-up recommendations for these lesions, and in the detection of associated cancer [10]. Consistent recommendations based on published guidelines helps to avoid unnecessary follow-up imaging while at the same time ensuring that concerning findings receive the proper attention for early detection and treatment.

In a recent study, three different management strategies were compared for a cohort of 60-year-old patients with branch duct intraductal papillary mucinous neoplasm (IPMN): Surveillance strategy, using consensus guidelines, surgical resection based on symptoms onset but without surveillance, and immediate surgery after initial diagnosis. The primary outcome was quality-adjusted life years (QALYs) cost. The no surveillance strategy was the least costly, but also least effective, while the surgery strategy was the most costly and effective. The surveillance strategy proved to be the more cost-effective option when compared to no surveillance, especially among patients with high-risk pancreatic cysts [9].

Another recent study performed using National Medicare rates to assess the downstream costs associated with pancreatic cysts incidentally detected on MRI, showed that over management of

pancreatic cysts ($842/cyst) cost on average $211/cyst more than properly managed ones ($631) [8]. As radiologic technology continues to advance and more pancreatic cysts are identified as a result it is becoming increasingly more important to ensure these findings receive the proper follow-up.

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Meaningful Measure Area: Preventive Care
NQS Domain: Communication and Care Coordination/Effective Clinical Care
Measure Type: Process
Data Source: Registry; RIS/VR System; Contracted third party data capture systems
Care Setting(s): All Settings
Measure Stewards: MSN Healthcare Solutions, LLC
Number of Performance Rates: 1
Inverse Measure: No
High Priority Measure: Yes – Appropriate Use
Telehealth Measure: No
Proportion Measure Scoring: Yes
Continuous Measure Scoring: No
Ratio Measure Scoring: No
MIPS Reporting Option(s): Traditional MIPS
Risk adjustment: No
NQF Number: Not applicable
eCQM Number: Not applicable

SAMPLE CALCULATIONS:

Data Completeness =
Performance Met (a=40 procedures) + Numerator Exclusion (b=20 procedures) + Performance Not Met (b=40 procedures) = 100 procedures = **100.00%**
Eligible Population / Denominator (c=100 procedures) = 100 procedures

Performance Rate =
Performance Met (a=40 procedures) = 40 procedures = **50.00%**
Data Completeness Numerator (100 procedures) – Numerator Exclusion (20 procedures) = 80 procedures

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Quality ID #QMM28: Reporting Breast Arterial Calcification (BAC) on Screening Mammography
- **National Quality Strategy Domain: Communication and Care Coordination**
- **Meaningful Measure Area: Preventive Care**

2026 COLLECTION TYPE:
QUALIFIED CLINICAL DATA REGISTRY QUALITY MEASURE (QCDR)

MEASURE TYPE:
Process

DESCRIPTION:
Percentage of final reports for screening mammography for female patients 40 years of age and older that include documentation of the presence or absence of Breast Arterial Calcification (BAC) and its clinical relevance.

INSTRUCTIONS:
This measure is to be submitted **each time** a screening mammography is performed on an eligible patient during the performance period.

Measure Submission Type:
Measure data may only be submitted by the measure steward or third-party-intermediaries possessing licensing rights from the measure steward. The listed denominator criteria are used to identify the intended patient population. The numerator options included in this specification are used to submit the quality actions as allowed by the measure.

DENOMINATOR:
All final reports for screening mammography for female patients 40 years of age and older.

Denominator Criteria (Eligible Cases):
All patients, 40 years of age and older at time of service,
AND
Patient procedure during the performance period (CPT): 77067
AND
Screening mammogram for malignant neoplasm of the breast (ICD-10-CM): Z12.31

Denominator Exclusion(s): Screening mammogram assigned a BIRADS 0: Incomplete **(DE028)**

NUMERATOR:
Final reports for screening mammography for female patients 40 years of age and older that include documentation of the presence or absence of Breast Arterial Calcification (BAC)/vascular calcifications* and its clinical relevance.

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Numerator Note:

- *Documentation of "no calcification(s)" without reference to breast artery or vascular system does not meet the performance requirement for this measure.*
- *Presence or absence of BAC/vascular calcifications must still be noted to qualify for denominator exception.*

Numerator Options:

Performance Met:

PM028: Final report for screening mammography includes documentation of the presence or absence of Breast Arterial Calcification (BAC)/vascular calcifications*, AND if present, includes a statement of clinical relevance (such as "A strong association has been shown between BAC and cardiovascular disease (CVD) and/or coronary artery disease (CAD), independent of other known risk factors") OR recommendation for follow-up of BAC/vascular calcifications.

OR

Performance Not Met:

PNM28: Final report for screening mammography does not include documentation of the presence or absence of Breast Arterial Calcification (BAC)/vascular calcifications, OR if present, does not include a statement of clinical relevance OR recommendation for follow-up of BAC/vascular calcifications.

OR

Denominator Exception:

PE028: Documentation of medical reason(s) for not including a statement of clinical relevance or recommendation for follow-up of BAC/vascular calcification (such as, patient actively being treated for CVD/CAD).

RATIONALE:

Although cardiovascular disease (CVD) continues to be the leading cause of death among women in the United States, there is a lack of effective and efficient screening methods [1]. Current guidelines recommend the use of cardiovascular risk-factor–based algorithms to identify individuals at high risk for coronary artery disease (CAD) and estimate their 10-year risk of atherosclerotic cardiovascular disease (ASCVD) [1,2]. These probabilistic algorithms, however, often underestimate the risk of CAD in women [2].

Mammography is widely used to screen for breast cancer in women aged 40 years and older, and breast arterial calcification (BAC) is a frequent, but not routinely reported, incidental finding [2]. Thus, screening mammography has the potential to alter the course of the leading cause of death in women through the evaluation of breast arterial calcification as a noninvasive approach to risk-stratify women for cardiovascular disease at no additional cost or radiation.

Breast arterial calcification (BAC) presents as benign calcifications that deposit in a linear or sheet-like fashion within the media of the breast arteries to varying degrees [1]. Multiple studies have suggested a strong association between BAC and cardiovascular disease (CVD) or coronary artery disease (CAD), independent of other known CVD risk factors [1].

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A recent systematic literature review of 59 studies suggests positive association between BAC and CAD. Of the 59 studies analyzed, 31 examined the association between BAC and CAD and had data available to calculate the odds ratio (OR) of the association of BAC and CAD. The pooled OR of the association of BAC and CAD was significant at 2.61 (95% CI 2.12–3.21), and when only studies of women with no prior history of CAD were included, the pooled OR of the association of BAC and CAD was even more significant at 3.46 (95% CI 1.57–7.61) [2].

Another study found a 1.52-fold increased risk of heart failure if BAC was present versus absent [1]. Thus, mammographic detection of breast arterial calcification (BAC) can be used to predict whether a patient has cardiovascular disease [3] and/or is at increased risk of heart failure [1].
Patients also have an overwhelming preference to be informed about BAC found at mammography. In a 2019 study to determine patient attitudes about mammographic reporting of breast arterial calcification (BAC), a large percentage (95.8% [363/379]) preferred to have BAC reported. Given the ease of reporting BAC and the calls by preventive cardiologists to have the information, the adoption of BAC reporting on mammography reports can promote prevention, diagnosis, and if needed, treatment of cardiovascular disease [3].

GAP ANALYSIS:
A recent study to investigate the knowledge of European Society of Breast Imaging (EUSOBI) radiologists on breast arterial calcifications (BAC) and attitudes about BAC reporting found 80.7% of the radiologists to be aware of BAC meaning in terms of cardiovascular risk, but only 61.9% to routinely include BAC in mammogram reports, when detected. Among those radiologists reporting BAC, 64.8% claimed simple annotation of BAC presence, 25.3% claimed to document the distinction between low versus extensive BAC burden, and 9.5% claimed to use an ordinal scale [4].

Another recent study that surveyed radiologist members of the American College of Radiology (ACR) to evaluate current practices of reporting breast arterial calcification (BAC) on mammography found that 87% (522/598) of ACR radiologist members include BAC in mammogram reports. However, only 41% (212/522) of respondents report BAC ‘always’ or ‘most of the time’. When BAC is reported, 69% (360/522) simply indicate the presence of BAC, 23% (121/522) provide a subjective grading of BAC burden, and 1% (6/522) calculate a BAC score [5].

ECONOMIC ANALYSIS:
A study performed by The Jacobs Institute of Women’s Health, The George Washington University School of Public Health estimated the annual economic burden of cardiovascular disease in women, direct costs only, to be $162 billion in 2009 [6]. It is important to detect cardiovascular disease as early as possible so that management with counselling and medicines can begin [7]. Early detection will help avoid more costly interventions that follow a heart attack, stroke, or other CVD-related events, and will vastly improve patients’ quality of life.

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References:

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Meaningful Measure Area: Preventative Care
NQS Domain: Communication and Care Coordination
Measure Type: Process
Data Source: Registry; RIS/VR System; Contracted third party data capture systems; Hybrid; Claims
Care Setting(s): Hospital; Hospital Inpatient; Hospital Outpatient; Imaging Facility; Outpatient Services
Measure Stewards: MSN Healthcare Solutions, LLC
Number of Performance Rates: 1
Inverse Measure: No
High Priority Measure: No
Telehealth Measure: No
Proportion Measure Scoring: Yes
Continuous Measure Scoring: No
Ratio Measure Scoring: No
MIPS Reporting Option(s): Traditional MIPS
Risk adjustment: No
NQF Number: Not applicable
eCQM Number: Not applicable

SAMPLE CALCULATIONS:

Data Completeness =

$$\frac{\text{Performance Met (a=40 procedures) + Numerator Exclusion (b=20 procedures) + Performance Not Met (b=40 procedures)}}{\text{Eligible Population / Denominator (c=100 procedures)}} = \frac{\text{100 procedures}}{\text{= 100 procedures}} = \textbf{100.00\%}$$

Performance Rate =

$$\frac{\text{Performance Met (a=40 procedures)}}{\text{Data Completeness Numerator (100 procedures) – Numerator Exclusion (20 procedures)}} = \frac{\text{40 procedures}}{\text{= 80 procedures}} = \textbf{50.00\%}$$

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Quality ID #QMM32: Intracerebral Hemorrhage (ICH) on Non-Contrast CT Head
- **National Quality Strategy Domain: Effective Clinical Care**
- **Meaningful Measure Area: Patient Focused Episode of Care**

2026 COLLECTION TYPE:
QUALIFIED CLINICAL DATA REGISTRY QUALITY MEASURE (QCDR)

MEASURE TYPE:
Process

DESCRIPTION:
All patients 18 years of age and older undergoing non-contrast CT (NCCT) Head with an initial diagnosis of intracerebral hemorrhage (ICH), also referred to as intra-axial or intraparenchymal hemorrhage (IPH), who have documentation of the location of ICH, ICH volume, and presence or absence of intraventricular hemorrhage (IVH) in the Final Report.

INSTRUCTIONS:
This measure is to be submitted **each time** a NCCT Head is performed on an eligible patient during the performance period. Proper documentation of the location of ICH, ICH volume, and presence or absence of intraventricular hemorrhage (IVH) is essential for ICH Score calculation.

Measure Submission Type:
Measure data may only be submitted by the measure steward or third-party-intermediaries possessing licensing rights from the measure steward. The listed denominator criteria are used to identify the intended patient population. The numerator options included in this specification are used to submit the quality actions as allowed by the measure.

DENOMINATOR:
All final reports for non-contrast CT (NCCT) Head performed on adult patients with an initial diagnosis of intracerebral hemorrhage (ICH)*.

***Denominator Note:** *This measure applies to patients undergoing the first NCCT Head scan from which intracerebral hemorrhage (ICH) is identified and diagnosed. Patients with subacute, chronic, stable, "stable acute", redemonstrated, or unchanged ICH should not be included in the denominator of this measure – they should be coded as an Exclusion (DE032).*

Denominator Criteria (Eligible Cases):
All patients, 18 years of age or older at time of service,
AND
Patient procedure during the performance period (CPT): 70450
AND
Diagnosis of Intracerebral Hemorrhage (ICH) (ICD-10-CM): I61, I61.0, I61.1, I61.2, I61.3, I61.4, I61.6, I61.8, I61.9

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Denominator Exclusion(s):
Extra-axial Hemorrhages (i.e., Extradural, Subdural, Subarachnoid, or Intraventricular-ONLY Hemorrhages) **(DE032)**
OR
Traumatic Hemorrhages / Traumatic Brain Injury **(DE032)**
OR
Previously seen/diagnosed/scanned Intracerebral Hemorrhage **(DE032)**
OR
Resolved Intracerebral Hemorrhage **(DE032)**
OR
No Intracerebral Hemorrhage (i.e., when ICH was coded because ICH was the only indication for the exam) **(DE032)**

NUMERATOR:
Final report contains documentation of ALL of the following:

1. Location of Intracerebral Hemorrhage (ICH) (e.g., supratentorial, infratentorial, right frontal, left parietal, left cerebellum, etc.)
2. Intracerebral Hemorrhage (ICH) volume (must be reported in mL, cm^3 or cc)*
3. Presence or absence of intraventricular hemorrhage (IVH)**

***Numerator Note #1:** For sub-centimeter hemorrhages (< 1 cm at greatest width), ICH volume does not need to be provided, however the location of ICH and the presence or absence of IVH (requirements 1 and 3 above) must still be documented in the final report to pass the measure.*

****Numerator Note #2:** The absence of IVH can be assumed if "no additional hemorrhages are identified" is documented in the final report.*

Numerator Options:
Performance Met:
PM032: Final report includes documentation of ALL of the following:

1. Location of Intracerebral Hemorrhage (ICH),
2. Intracerebral Hemorrhage (ICH) volume (must be in mL, cm^3 or cc)*, AND
3. Presence or absence of intraventricular hemorrhage (IVH)**

OR

Performance Not Met:
PNM32: Final report does not include documentation of ALL of the following:

1. Location of Intracerebral Hemorrhage (ICH),
2. Intracerebral Hemorrhage (ICH) volume (must be in mL, cm^3 or cc)*, AND
3. Presence or absence of intraventricular hemorrhage (IVH)**

OR

Denominator Exception:
PE032: Documentation of medical reason(s) for not including ALL of the requirements listed above in the final report (such as, patients with hemorrhagic contusion).

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RATIONALE:

Intracerebral hemorrhage (ICH) accounts for approximately 15% of all strokes and 50% of stroke-related mortality, resulting in approximately 2.8 million deaths worldwide each year. ICH occurs in younger patients more often than ischemic strokes, and it is more likely to be fatal or permanently disabling. Unlike ischemic stroke, however, there have not yet been major breakthroughs in definitive management of ICH. There are also important racial and socioeconomic health disparities related to the incidence and prognosis of ICH. For instance, in the United States, the rate of ICH among African Americans is more than double that of Caucasian Americans [2].

ICH location can provide important clues in the identification of ICH etiology. Deep ICHs are more commonly associated with long standing hypertension or other vascular risk factors whereas lobar bleedings are traditionally associated with cerebral amyloid angiopathy (CAA) in the right clinical context. Distinguishing CAA from hypertensive arteriopathy is important information to have when developing a treatment plan, because patients with ICH due to CAA have a much higher risk of recurrence (8–10% vs. 1–2%) and have a higher risk of post-stroke dementia [3].

Up to half of ICH patients experience active bleeding leading to hematoma enlargement. Hematoma Expansion (HE) is independently associated with unfavorable prognosis; therefore, accurate stratification of ICH expansion risk is highly desirable in order to identify patients at high risk of HE that are more likely to benefit from anti-expansion therapies. ICH volume is directly associated with the odds of hematoma enlargement [3].

The ICH score, one of the most commonly used prognostic tools, is heavily based on neuroimaging items. **ICH volume is the strongest predictor of poor prognosis and can be rapidly estimated on baseline NCCT. Infratentorial location and presence of intraventricular hemorrhage are the other imaging items included in the ICH score, both associated with higher risk of poor prognosis** such as mass effect and midline shift [3].

The ICH Score is a clinical grading scale composed of factors related to a basic neurological examination (GCS), a baseline patient characteristic (age), and the initial neuroimaging items discussed above (ICH volume, IVH, infratentorial origin). The purpose of this grading scale is to provide a standard assessment tool that can be easily and rapidly determined at the time of ICH presentation by physicians without specialized training in stroke neurology and that will allow consistency in communication and treatment selection [1].

CLINICAL RECOMMENDATION STATEMENT(S):

American Heart Association (AHA)/American Stroke Association:

Several recent systematic meta-analyses have quantified the validity of the ICH score for prediction of mortality and functional outcome. These data show excellent performance of established severity scores and demonstrate their potential usefulness for risk stratification, assessment of disease severity, adjustment in quality measures, and communication between clinicians and patients and family members. Baseline prognostic scores are often obtained within the first 24 hours, although the optimal timing has not been thoroughly studied [4].

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GAP ANALYSIS:
We sampled 1,242 non-contrast CT (NCCT) Head radiology reports across a six-month period and 10 radiology practices, and found 206 reports for adult patients with an initial diagnosis of intracerebral hemorrhage (ICH). Of the 206 reports, only 29 (14.22%) included documentation of the location of ICH, ICH volume, and presence or absence of intraventricular hemorrhage (IVH).

ECONOMIC ANALYSIS:
The economic burden associated with the treatment of ICH is considerably higher than that of ischemic stroke. For instance, in Canada, the median cost of treating spontaneous ICH was USD $10,500 per hospitalization per patient during the decade from 1999 to 2008, with the majority of the cost incurred during acute hospitalization (median of USD $7300) [5].

In a retrospective study, the following cost per person, calculated as mean, was determined: hospitalization $18,154 for AIS and $24,077 for ICH; monthly 3-year aggregate $5138 for AIS and $8172 for ICH; 3-year inpatient rehabilitation $4185 for AIS and $4196 for ICH; homecare $19,728 for AIS and $14,487 for ICH; indirect cost from lost productivity $77,078 for AIS and $56,601 for ICH. Age < 55 years, being non-white, and stroke severity were strongly associated with greater hospitalization cost for AIS and ICH.

References:

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first acute ischemic stroke and intracerebral hemorrhage. Journal of the neurological sciences. 2020 Dec 15;419:117181. doi: https://doi.org/10.1016/j.jns.2020.117181.

Meaningful Measure Area: Promote Effective Prevention and Treatment of Chronic Disease
NQS Domain: Patient Safety
Measure Type: Process
Data Source: Paper medical record; Record review; Hybrid
Care Setting(s): All Settings
Measure Stewards: MSN Healthcare Solutions, LLC
Number of Performance Rates: 1
Inverse Measure: No
High Priority Measure: Yes – Care Coordination
Telehealth Measure: No
Proportion Measure Scoring: Yes
Continuous Measure Scoring: No
Ratio Measure Scoring: No
MIPS Reporting Option(s): Traditional MIPS
Risk adjustment: No
NQF Number: Not applicable
eCQM Number: Not applicable

SAMPLE CALCULATIONS:

Data Completeness =

$$\frac{\text{Performance Met (a=40 procedures) + Numerator Exclusion (b=20 procedures) + Performance Not Met (b=40 procedures)}}{\text{Eligible Population:Denominator (c=100 procedures)}} = \frac{100 \text{ procedures}}{= 100 \text{ procedures}} = \mathbf{100.00\%}$$

Performance Rate =

$$\frac{\text{Performance Met (a=40 procedures)}}{\text{Data Completeness Numerator (100 procedures) – Numerator Exclusion (20 procedures)}} = \frac{40 \text{ procedures}}{= 80 \text{ procedures}} = \mathbf{50.00\%}$$