# American College of Radiology National Radiology Data Registry

## Qualified Clinical Data Registry Measures

**January 2025**

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| **QCDR Measure Number** | ACRad 15 |
| **Measure Title:** | Report Turnaround Time: Radiography |

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| **Measure Description** | Mean radiography report turnaround time (RTAT). (Does not include mammography.)<br><br>This measure has been harmonized with MSN QCDR. |
| **QCDR Measure Type** | Existing Approved QCDR Measure with No Changes |
| **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 Imaging facility, ED, Other |
| **Denominator** | Total number of radiography exams completed |
| **Denominator Elements** | Exam modality or CPT/HCPCS Code or ICD-10 PCS Code; Date/time of exam completion |
| **Denominator Exclusions** | None |
| **Denominator Exceptions** | None |
| **Numerator** | Mean time from exam completion to final signature on report, in hours |
| **Numerator Exclusions** | None |
| **Numerator Data Elements** | Date/time of exam completion; Date/time of report signed |
| **Number of performance rates to be submitted** | 1 |
| **Performance Rate Descriptions** | N/A |
| **Indicate an Overall Performance Rate if more than 1** | N/A |
| **Measure Type (Process/Outcome)** | Outcome |
| **High Priority Measure** | Yes |
| **Outcome Measure** | Yes |
| **Inverse Measure** | Yes |
| **Proportion Measure** | No |
| **Continuous Measure** | Yes |
| **Ratio Measure** | No |
| **If continuous variable or ratio is chosen, what would be the range of the scores?** | 0.00-9999.00 |

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| **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** | This measure was approved by CMS for QCDR inclusion in 2014.<br><br>The written imaging report is a key method for providing diagnostic interpretation to referring clinicians from radiologists. Timely final imaging reports support informed and efficient decision making for treatment plans by referring physicians, and ultimately the delivery of care to patients. While important to timely treatment and potentially better health outcomes, short turnaround of reports also improves patients' experience with care, cuts input costs, and improves the throughput of imaging exams. Rapid turnaround time (TAT) of reports is especially important to patient care provided in the emergency department (ED). These measures encompass all settings, enabling quality improvement in each. While the definition of timeliness depends on setting or site characteristics, using comparative benchmarks from registry data provides radiologists with transparent feedback to optimize TAT at their sites. The American Board of Radiology includes "turnaround time" as one category from which radiologists may select to conduct a practice quality improvement (Part IV) for continued Maintenance of Certification. |
| **Rationale** | This measure is modified to exclude mammography, because mammography is clinically distinct from other kinds of radiography procedures - it is overwhelmingly performed for screening asymoptomatic patients.)<br><br>The written imaging report is a key method for providing diagnostic interpretation to referring clinicians from radiologists. Timely final imaging reports support informed and efficient decision making for treatment plans by referring physicians, and ultimately the delivery of care to patients. While important to timely treatment and potentially better health outcomes, short turnaround of reports also improves patients' experience with care, cuts input costs, and improves the throughput of imaging exams. Rapid turnaround time (TAT) of reports is especially important to patient care provided in the emergency department (ED). These measures encompass all settings, enabling quality improvement in each. While the definition of timeliness depends on setting or site |

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| | characteristics, using comparative benchmarks from registry data provides radiologists with transparent feedback to optimize TAT at their sites. The American Board of Radiology includes "turnaround time" as one category from which radiologists may select to conduct a practice quality improvement (Part IV) for continued Maintenance of Certification.<br><br>ACR Practice Guideline for Communication of Diagnostic Imaging Findings |
| **Specialty this measure applies to** | Radiology |
| **Measure Funding Source (Steward)** | American College of Radiology |

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| **QCDR Measure Number** | ACRad 16 |
| **Measure Title:** | Report Turnaround Time: Ultrasound (Excluding Breast US) |

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| **Measure Description** | Mean ultrasound report turnaround time (RTAT).<br>This measure has been harmonized with MSN QCDR. |
| **QCDR Measure Type** | Existing Approved QCDR Measure with No Changes |
| **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, Imaging facility, ED, Other |
| **Denominator** | Total number of ultrasound exams completed (excluding breast US) |
| **Denominator Elements** | Exam modality or CPT/HCPCS Code or ICD-10 PCS Code; Date/time of exam completion |
| **Denominator Exclusions** | None |
| **Denominator Exceptions** | None |
| **Numerator** | Mean time from exam completion to final signature on report, in hours |
| **Numerator Exclusions** | None |
| **Numerator Data Elements** | Date/time of exam completion; Date/time of report signed |
| **Number of performance rates to be submitted** | 1 |
| **Performance Rate Description** | N/A |
| **Indicate an Overall Performance Rate if more than 1** | N/A |
| **Measure Type (Process/Outcome)** | Outcome |
| **High Priority Measure** | Yes |
| **Outcome Measure** | Yes |
| **Inverse Measure** | Yes |
| **Proportion Measure** | No |
| **Continuous Measure** | Yes |
| **Ratio Measure** | No |
| **If continuous variable or ratio is chosen, what would be the range of the scores?** | 0.00-9999.00 |

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| **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** | This measure was approved by CMS for QCDR inclusion in 2014.<br><br>The written imaging report is a key method for providing diagnostic interpretation to referring clinicians from radiologists. Timely final imaging reports support informed and efficient decision making for treatment plans by referring physicians, and ultimately the delivery of care to patients. While important to timely treatment and potentially better health outcomes, short turnaround of reports also improves patients' experience with care, cuts input costs, and improves the throughput of imaging exams. Rapid turnaround time (TAT) of reports is especially important to patient care provided in the emergency department (ED). These measures encompass all settings, enabling quality improvement in each. While the definition of timeliness depends on setting or site characteristics, using comparative benchmarks from registry data provides radiologists with transparent feedback to optimize TAT at their sites. The American Board of Radiology includes "turnaround time" as one category from which radiologists may select to conduct a practice quality improvement (Part IV) for continued Maintenance of Certification. |
| **Rationale** | The written imaging report is a key method for providing diagnostic interpretation to referring clinicians from radiologists. Timely final imaging reports support informed and efficient decision making for treatment plans by referring physicians, and ultimately the delivery of care to patients.<br><br>While important to timely treatment and potentially better health outcomes, short turnaround of reports also improves patients' experience with care, cuts input costs, and improves the throughput of imaging exams. Rapid turnaround time (TAT) of reports is especially important to patient care provided in the emergency department (ED). These measures encompass all settings, enabling quality improvement in each. While the definition of timeliness depends on setting or site characteristics, using comparative benchmarks from registry data provides radiologists with transparent feedback to optimize TAT at their sites. The American Board of Radiology includes |

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| | "turnaround time" as one category from which radiologists may select to conduct a practice quality improvement (Part IV) for continued Maintenance of Certification.<br><br>ACR Practice Guideline for Communication of Diagnostic Imaging Findings |
| **Specialty this measure applies to** | Radiology |
| **Measure Funding Source (Steward)** | American College of Radiology |

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| **QCDR Measure Number** | ACRad 17 |
| **Measure Title:** | Report Turnaround Time: MRI |
| **Measure Description** | Mean MRI report turnaround time (RTAT).<br>This measure has been harmonized with MSN QCDR. |
| **QCDR Measure Type** | Existing Approved QCDR Measure with No Changes |
| **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, Imaging facility, ED, Other |
| **Denominator** | Total number of MRI exams completed |
| **Denominator Elements** | Exam modality or CPT/HCPCS Code or ICD-10 PCS Code; Date/time of exam completion |
| **Denominator Exclusions** | None |
| **Denominator Exceptions** | None |
| **Numerator** | Mean time from exam completion to final signature on report, in hours |
| **Numerator Exclusions** | None |
| **Numerator Data Elements** | Date/time of exam completion; Date/time of report signed |
| **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)** | Outcome |
| **High Priority Measure** | Yes |
| **Outcome Measure** | Yes |
| **Inverse Measure** | Yes |
| **Proportion Measure** | No |
| **Continuous Measure** | Yes |
| **Ratio Measure** | No |
| **If continuous variable or ratio is chosen, what would be the range of the scores?** | 0.00-9999.00 |
| **Is the measure risk adjusted?** | No |

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| **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** | This measure was approved by CMS for QCDR inclusion in 2014.<br><br>The written imaging report is a key method for providing diagnostic interpretation to referring clinicians from radiologists. Timely final imaging reports support informed and efficient decision making for treatment plans by referring physicians, and ultimately the delivery of care to patients. While important to timely treatment and potentially better health outcomes, short turnaround of reports also improves patients' experience with care, cuts input costs, and improves the throughput of imaging exams. Rapid turnaround time (TAT) of reports is especially important to patient care provided in the emergency department (ED). These measures encompass all settings, enabling quality improvement in each. While the definition of timeliness depends on setting or site characteristics, using comparative benchmarks from registry data provides radiologists with transparent feedback to optimize TAT at their sites. The American Board of Radiology includes "turnaround time" as one category from which radiologists may select to conduct a practice quality improvement (Part IV) for continued Maintenance of Certification. |
| **Rationale** | The written imaging report is a key method for providing diagnostic interpretation to referring clinicians from radiologists. Timely final imaging reports support informed and efficient decision making for treatment plans by referring physicians, and ultimately the delivery of care to patients. While important to timely treatment and potentially better health outcomes, short turnaround of reports also improves patients' experience with care, cuts input costs, and improves the throughput of imaging exams. Rapid turnaround time (TAT) of reports is especially important to patient care provided in the emergency department (ED). These measures encompass all settings, enabling quality improvement in each. While the definition of timeliness depends on setting or site characteristics, using comparative benchmarks from registry data provides radiologists with transparent feedback to optimize TAT at their sites. The American Board of Radiology includes "turnaround time" as one category from which radiologists may select to conduct a practice quality improvement (Part IV) for continued Maintenance of Certification. Additional information is provided in Appendix. |

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| | ACR Practice Guideline for Communication of Diagnostic Imaging Findings |
| **Specialty this measure applies to** | Radiology |
| **Measure Funding Source (Steward)** | American College of Radiology |

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| **QCDR Measure Number** | ACRad 18 |
| **Measure Title:** | Report Turnaround Time: CT |

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| **Measure Description** | Mean CT report turnaround time (RTAT).<br>This measure has been harmonized with MSN QCDR. |
| **QCDR Measure Type** | Existing Approved QCDR Measure with No Changes |
| **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, Imaging facility, ED, Other |
| **Denominator** | Total number of CT exams completed |
| **Denominator Elements** | Exam modality or CPT/HCPCS Code or ICD-10 PCS Code; Date/time of exam completion |
| **Denominator Exclusions** | None |
| **Denominator Exceptions** | None |
| **Numerator** | Mean time from exam completion to final signature on report, in hours |
| **Numerator Exclusions** | None |
| **Numerator Data Elements** | Date/time of exam completion; Date/time of report signed |
| **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)** | Outcome |
| **High Priority Measure** | Yes |
| **Outcome Measure** | Yes |
| **Inverse Measure** | Yes |
| **Proportion Measure** | No |
| **Continuous Measure** | Yes |
| **Ratio Measure** | No |
| **If continuous variable or ratio is chosen, what would be the range of the scores?** | 0.00-9999.00 |

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| **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** | This measure was approved by CMS for QCDR inclusion in 2014.<br><br>The written imaging report is a key method for providing diagnostic interpretation to referring clinicians from radiologists. Timely final imaging reports support informed and efficient decision making for treatment plans by referring physicians, and ultimately the delivery of care to patients. While important to timely treatment and potentially better health outcomes, short turnaround of reports also improves patients' experience with care, cuts input costs, and improves the throughput of imaging exams. Rapid turnaround time (TAT) of reports is especially important to patient care provided in the emergency department (ED). These measures encompass all settings, enabling quality improvement in each. While the definition of timeliness depends on setting or site characteristics, using comparative benchmarks from registry data provides radiologists with transparent feedback to optimize TAT at their sites. The American Board of Radiology includes "turnaround time" as one category from which radiologists may select to conduct a practice quality improvement (Part IV) for continued Maintenance of Certification. |
| **Rationale** | The written imaging report is a key method for providing diagnostic interpretation to referring clinicians from radiologists. Timely final imaging reports support informed and efficient decision making for treatment plans by referring physicians, and ultimately the delivery of care to patients. While important to timely treatment and potentially better health outcomes, short turnaround of reports also improves patients' experience with care, cuts input costs, and improves the throughput of imaging exams. Rapid turnaround time (TAT) of reports is especially important to patient care provided in the emergency department (ED). These measures encompass all settings, enabling quality improvement in each. While the definition of timeliness depends on setting or site characteristics, using comparative benchmarks from registry data provides radiologists with transparent feedback to optimize TAT at their sites. The American Board of Radiology includes "turnaround time" as one category from which radiologists may select to conduct a practice quality improvement (Part IV) for continued Maintenance of Certification. Additional |

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| | information is provided in Appendix.<br><br>ACR Practice Guideline for Communication of Diagnostic Imaging Findings |
| **Specialty this measure applies to** | Radiology |
| **Measure Funding Source (Steward)** | American College of Radiology |

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|---|---|
| **QCDR Measure Number** | ACRad 19 |
| **Measure Title:** | Report Turnaround Time: PET |

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| **Measure Description** | Mean PET report turnaround time (RTAT).<br>This measure has been harmonized with MSN QCDR. |
| **QCDR Measure Type** | Existing Approved QCDR Measure with No Changes |
| **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, Imaging facility, ED, Other |
| **Denominator** | Total number of PET exams completed |
| **Denominator Elements** | Exam modality or CPT/HCPCS Code or ICD-10 PCS Code; Date/time of exam completion |
| **Denominator Exclusions** | None |
| **Denominator Exceptions** | None |
| **Numerator** | Mean time from exam completion to final signature on report, in hours |
| **Numerator Exclusions** | None |
| **Numerator Data Elements** | Date/time of exam completion; Date/time of report signed |
| **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)** | Outcome |
| **High Priority Measure** | Yes |
| **Outcome Measure** | Yes |
| **Inverse Measure** | Yes |
| **Proportion Measure** | No |
| **Continuous Measure** | Yes |
| **Ratio Measure** | No |
| **If continuous variable or ratio is chosen, what would be the range of the scores?** | 0.00-9999.00 |

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| **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** | This measure was approved by CMS for QCDR inclusion in 2014.<br><br>The written imaging report is a key method for providing diagnostic interpretation to referring clinicians from radiologists. Timely final imaging reports support informed and efficient decision making for treatment plans by referring physicians, and ultimately the delivery of care to patients. While important to timely treatment and potentially better health outcomes, short turnaround of reports also improves patients' experience with care, cuts input costs, and improves the throughput of imaging exams. Rapid turnaround time (TAT) of reports is especially important to patient care provided in the emergency department (ED). These measures encompass all settings, enabling quality improvement in each. While the definition of timeliness depends on setting or site characteristics, using comparative benchmarks from registry data provides radiologists with transparent feedback to optimize TAT at their sites. The American Board of Radiology includes "turnaround time" as one category from which radiologists may select to conduct a practice quality improvement (Part IV) for continued Maintenance of Certification. |
| **Rationale** | The written imaging report is a key method for providing diagnostic interpretation to referring clinicians from radiologists. Timely final imaging reports support informed and efficient decision making for treatment plans by referring physicians, and ultimately the delivery of care to patients. While important to timely treatment and potentially better health outcomes, short turnaround of reports also improves patients' experience with care, cuts input costs, and improves the throughput of imaging exams. Rapid turnaround time (TAT) of reports is especially important to patient care provided in the emergency department (ED). These measures encompass all settings, enabling quality improvement in each. While the definition of timeliness depends on setting or site characteristics, using comparative benchmarks from registry data provides radiologists with transparent feedback to optimize TAT at their sites. The American Board of Radiology includes "turnaround time" as one category from which radiologists may select to conduct a practice quality improvement (Part IV) for continued Maintenance of Certification. |

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| | ACR Practice Guideline for Communication of Diagnostic Imaging Findings |
| **Specialty this measure applies to** | Radiology |
| **Measure Funding Source (Steward)** | American College of Radiology |

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| **QCDR Measure Number** | ACRad 25 |
| **Measure Title:** | Report Turnaround Time: Mammography |

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| **Measure Description** | Mean mammography report turnaround time (RTAT).<br>This measure has been harmonized with MSN QCDR. |
| **QCDR Measure Type** | Existing Approved QCDR Measure with No Changes |
| **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, Imaging facility, ED, Other |
| **Denominator** | Total number of mammography exams completed |
| **Denominator Elements** | Exam modality or CPT/HCPCS Code or ICD-10 PCS Code; Date/time of exam completion |
| **Denominator Exclusions** | None |
| **Denominator Exceptions** | None |
| **Numerator** | Mean time from exam completion to final signature on report, in hours |
| **Numerator Exclusions** | None |
| **Numerator Data Elements** | Date/time of exam completion; Date/time of report signed |
| **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)** | Outcome |
| **High Priority Measure** | Yes |
| **Outcome Measure** | Yes |
| **Inverse Measure** | Yes |
| **Proportion Measure** | No |
| **Continuous Measure** | Yes |
| **Ratio Measure** | No |
| **If continuous variable or ratio is chosen, what would be the range of the scores?** | 0.00-9999.00 |

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| **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** | This measure was approved by CMS for QCDR inclusion in 2017.<br><br>The written imaging report is a key method for providing diagnostic interpretation to referring clinicians from radiologists. Timely final imaging reports support informed and efficient decision making for treatment plans by referring physicians, and ultimately the delivery of care to patients. While important to timely treatment and potentially better health outcomes, short turnaround of reports also improves patients' experience with care, cuts input costs, and improves the throughput of imaging exams. Rapid turnaround time (TAT) of reports is especially important to patient care provided in the emergency department (ED). These measures encompass all settings, enabling quality improvement in each. While the definition of timeliness depends on setting or site characteristics, using comparative benchmarks from registry data provides radiologists with transparent feedback to optimize TAT at their sites. The American Board of Radiology includes "turnaround time" as one category from which radiologists may select to conduct a practice quality improvement (Part IV) for continued Maintenance of Certification. |
| **Rationale** | The written imaging report is a key method for providing diagnostic interpretation to referring clinicians from radiologists. Timely final imaging reports support informed and efficient decision making for treatment plans by referring physicians, and ultimately the delivery of care to patients. While important to timely treatment and potentially better health outcomes, short turnaround of reports also improves patients' experience with care, cuts input costs, and improves the throughput of imaging exams. Rapid turnaround time (TAT) of reports is especially important to patient care provided in the emergency department (ED). These measures encompass all settings, enabling quality improvement in each. While the definition of timeliness depends on setting or site characteristics, using comparative benchmarks from registry data provides radiologists with transparent feedback to optimize TAT at their sites. The American Board of Radiology includes "turnaround time" as one category from which radiologists may select to conduct a practice quality improvement (Part IV) for continued Maintenance of Certification. |

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| | ACR Practice Guideline for Communication of Diagnostic Imaging Findings |
| **Specialty this measure applies to** | Radiology |
| **Measure Funding Source (Steward)** | American College of Radiology |

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| **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 Elements** | Study description; Exam date; Acquisition protocol |
| **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 |
| **Numerator Data Elements** | Dose length product; CTDIw Phantom Type; Effective Diameter (calculated from localizer image) |
| **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:<br><br>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 |

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| | 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<br><br>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.<br><br>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
6. 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.
7. Brody AS, Frush DP, Huda W, et al. Radiation risk to children from computed tomography. Pediatrics 2007; 120:677-682.
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.
9. U.S. Food and Drug Administration Initiative to Reduce Unnecessary Radiation Exposure from Medical Imaging. March 2010
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11. Goske MJ, Strauss KJ, Coombs LP et al. Diagnostic reference ranges for pediatric abdominal CT. Radiology 2013;268:208-18.
12. Escalon JG, Chatfield MB, Sengupta D, Loftus ML. Dose length products for the 10 most commonly ordered CT examinations in adults: analysis of three years of the ACR dose index registry. Journal of the American College of Radiology. 2015 Aug 31;12(8):815-23.
13. Kanal K, Butler PF, Sengupta D, Chatfield MB, Coombs LP, Morin RL. United States Diagnostic Reference
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

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| | 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.<br><br>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 |

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| **QCDR Measure Number** | ACRad 36 |
| **Measure Title:** | Incidental Coronary Artery Calcification Reported on Chest CT |

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| **Measure Description** | Percentage of final reports for male patients aged 18 years through 50 and female patients aged 18 through 65 years undergoing noncardiac noncontrast chest CT exams or with and without contrast chest CT exams that note presence or absence of coronary artery calcification or not evaluable. |
| **QCDR Measure Type** | Existing Approved QCDR Measure with No Changes |
| **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 male patients aged 18 years through 50 and female patients aged 18 through 65 years undergoing noncardiac noncontrast chest CT exams or with and without contrast chest CT exams |
| **Denominator Elements** | Patient age; Patient gender; Modality procedure; Body region; Contrast usage |
| **Denominator Exclusions** | Patients who have received prior coronary artery bypass grafts or prior percutaneous coronary intervention with stent |
| **Denominator Exceptions** | None |
| **Numerator** | Final reports that note presence or absence of coronary artery calcification or not evaluable |
| **Numerator Exclusions** | None |
| **Numerator Data Elements** | Final report findings |
| **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 |

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| **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:<br>[Coronary Artery Calcium (CAC)] should be evaluated and reported on all noncontrast chest CT examinations (Class I Recommendation) (SCCT/STR, 2016)<br><br>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.<br>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.<br>4. Chiles C, Duan F, Gladish GW, Ravenel JG, Baginski SG, Snyder BS, et al. Association of coronary artery calcification and mortality in the national lung screening trial: A comparison of three scoring methods. Radiology. 2015;276:82-90.<br>5. Uretsky S, Chokshi N, Kobrinski T, Agarwal SK, Po JR, Awan H, et al. The interplay of physician awareness and reporting of incidentally found coronary artery calcium on the clinical management of patients who underwent noncontrast chest computed tomography. Am J Cardiol. 2015;115:1513-1517.<br>6. Balakrishan R, Nguyen B, Raad R, Donnino R, Naidich DP, Jacobs JE, Reynolds HR. Coronary artery calcification is common on nongated chest computed tomography imaging. Clin Cardiol. 2017. https://doi.org/10.1002/clc.22685. |
| **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 |

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| | 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.<br><br>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 |

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| **QCDR Measure Number** | ACRad 37 |
| **Measure Title:** | Interpretation of CT Pulmonary Angiography (CTPA) for Pulmonary Embolism |

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| **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) |
| **QCDR Measure Type** | Existing Approved QCDR Measure with No Changes |
| **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 and older undergoing CT pulmonary angiography (CTPA) with a finding of pulmonary embolism |
| **Denominator Elements** | Patient age; Modality Procedure; Modality Modifier; Body Region; Anatomy; Final Report Findings |
| **Denominator Exclusions** | None |
| **Denominator Exceptions** | None |
| **Numerator** | Final reports that specify that branching order level of the most proximal level of embolus (i.e. main, lobar, interlobar, segmental, subsegmental) |
| **Numerator Exclusions** | None |
| **Numerator Data Elements** | Final Report Findings; PE Documentation |
| **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 |

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| **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:<br><br>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)<br><br>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)<br>CT angiography showing a segmental or more proximal thrombus confirms PE. (Class I Recommendation; Level of Evidence B) (ESC, 2014)<br><br>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.<br><br>Variation in care:<br>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

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| **QCDR Measure Number** | ACRad 41 |
| **Measure Title:** | Use of Quantitative Criteria for Oncologic FDG PET Imaging |

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| **Measure Description** | Percentage of final reports for all patients, regardless of age, undergoing non-CNS oncologic FDG PET studies that include at a minimum:<br>a. Serum glucose (eg, finger stick at time of injection)<br>b. Uptake time (interval from injection to initiation of imaging)<br>c. One reference background (eg, volumetric normal liver or mediastinal blood pool) SUV measurement, along with description of the SUV measurement type (eg, SUVmax) and normalization method (eg, BMI)<br>d. At least one lesional SUV measurement OR diagnosis of "no disease-specific abnormal uptake" |
| **QCDR Measure Type** | Existing Approved QCDR Measure with No Changes |
| **Does this measure belong to another QCDR?** | No |
| **NQF Number** | N/A |
| **NQS Domain** | Communication and Care Coordination |
| **Care Setting** | Outpatient hospital, Inpatient hospital |
| **Denominator** | All final reports for all patients, regardless of age, undergoing non-CNS oncologic FDG PET studies |
| **Denominator Elements** | Modality Procedure; Nuclear Agent; Clinical Focus; Anatomy |
| **Denominator Exclusions** | None |
| **Denominator Exceptions** | None |
| **Numerator** | Final reports for FDG PET scans that include at a minimum:<br>a. Serum glucose (eg, finger stick at time of injection)<br>b. Uptake time (interval from injection to initiation of imaging)<br>c. One reference background (eg, volumetric normal liver or mediastinal blood pool) SUV measurement, along with description of the SUV measurement type (eg, SUVmax) and normalization method (eg, BMI)<br>d. At least one lesional SUV measurement OR diagnosis of "no disease-specific abnormal uptake" |
| **Numerator Exclusions** | None |
| **Numerator Data Elements** | FDG PET Measurements Documented |
| **Number of performance rates to be submitted** | 1 |
| **Indicate an Overall Performance Rate if more than 1** | N/A |
| **Performance Rate Description** | N/A |

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| **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:<br><br>The technique section of the report should contain the radiopharmaceutical (eg, 18F-FDG), the administered activity, route and site of administration, as well as any pharmaceuticals administered (eg, diuretics, benzodiazepines). The serum glucose level at the time of radiopharmaceutical administration should be reported as well as patient weight, time from injection to scanning, and technique for calculating SUVs (ie, body weight, lean body weight, or body surface criteria). (ACR, 2016)<br>The findings section should include description of the location, extent, and intensity of abnormal FDG uptake in relation to normal comparable tissues and should describe the relevant morphological findings on the CT images. Ideally, image and series numbers should also be included. Additionally, background activity (eg, mediastinal blood pool and/or volumetric normal liver) should be measured to help compare SUV values. Often injection-site infiltrates, such as arms, or attenuation-correction errors can significantly alter SUV values in lesions, leading to false conclusions. An estimate of the intensity of FDG uptake can be provided with the SUV; however, the intensity of uptake may be described as mild, moderate, or intense in relation to the background update in normal hepatic parenchyma or the mediastinal blood pool. (ACR, 2016) |

1. American College of Radiology. ACR-SPR Practice Parameter for Performing FDG-PT/CT in Oncology. https://www.acr.org/Quality-Safety/Standards-Guidelines/Practice-Guidelines-by-Modality/Nuclear-Medicine. 2016. Accessed December 10, 2017
2. Coleman RE, Hillner BE, Shields AF, et al. PET and PET/CT reports: observations from the National Oncologic PET Registry. J Nucl Med. 2010 Jan;51(1):158-63. doi: 10.2967/jnumed.109.066399. Epub 2009 Dec 15.
3. Niederkohr RD, Greenspan BS, Prior JO, et al. Reporting guidance for oncologic 18F-FDG PET/CT imaging. J Nucl Med. 2013 May;54(5):756-61. doi: 10.2967/jnumed.112.112177. Epub 2013 Apr 10.

**Rationale**

Results of imaging studies play an increasingly major role in oncology for diagnostic evaluation, development of treatment plans, and monitoring of treatment response. Results of FDG PET scans are communicated to referring health care providers and patients primarily via the diagnostic imaging report. However, there is significant variation in the format and content of final reports. Many important components of PET studies are often missing from final reports including blood glucose level, SUV measurement, and the time from radiopharmaceutical injection to imaging. Such information also helps with contextual interpretation of SUV measurements for abnormal lesions. These measurements are important for technical comparisons between studies and from one center to another for a more reliable diagnosis. Excluding these components may adversely affect comparison with subsequent and prior studies.

Including the quantitative criteria in the report for a current exam provides important technical details that are the basis for many of the physiologic manifestations seen on the study. There are accepted and established standards for how PET/CTs should be optimally performed and varying from these parameters can affect the physiology and therefore the imaging findings. Including technical information like glucose level and time from injection can help interpreting clinicians know if the study was performed optimally and if the findings are anticipated to be reliable.

Second, particularly for cancer imaging, evaluation of change in disease/response to therapy is often dependent not only on size measurements of lesions, but also on the metabolic activity. The measurement of SUV values is a surrogate measure of relative metabolic activity and comparing SUV values between scans is frequently performed. However, the SUV measurement is a normalized value so it is important to mention the method of normalization (by weight, total mass etc). Furthermore, it is very dependent technical variables including glucose level, time for injection of FDG, scanner and processing algorithm etc. As such, it can be tricky to compare

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| | SUV values between scanners/imaging centers unless similar techniques and protocols are employed.<br><br>One of the methods used to assess if, generally speaking, scans are acceptably similar and SUV values can be compared with decent reliability is by comparing a reference background measurement. This reference background measurement should always be obtained and ideally is one that is less susceptible to drug/disease related issues etc., such as the cerebellum as a standard measure.<br><br>The reporting of these data helps ensure that standard and appropriate protocol was performed and hence the study is believed to be interpretable and the findings are assumed to be real. It also is primarily helpful for comparisons among many studies. On occasion, such numbers and data may influence interpretation of certain findings (ie SUV value [and implied aggressiveness] of a particular lesion etc) on the given scan.<br><br>If the SUV is measured for a lesion, most physicians will automatically include a prior comparative SUV measurement to demonstrate any change. This is standard practice and not the intent of this measure. Furthermore, at the discretion of physicians in some cases there may not be a good comparison measurement or size changes may be most relevant (and the SUV values may be misleading), so they may choose to not include certain comparative measures. |
| **Specialty this measure applies to** | Radiology |
| **Measure Funding Source (Steward)** | American College of Radiology |

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| **QCDR Measure Number** | ACRad 43 |
| **Measure Title:** | DXA: Improving Reporting of True Change in Bone Mineral Density |
| **Measure Description** | Percentage of exam final reports for all serial DXA exams which have a comparable prior exam that include (1) an appropriate Least Significant Change (LSC) statement referencing a facility's LSC values and (2) a second statement regarding whether the measurement difference between the current exam and prior exam constitutes a significant change or not. |
| **QCDR Measure Type** | New QCDR Measure in 2025 |
| **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 serial DXA exams which have an available comparable prior exam. |
| **Denominator Elements** | Modality Procedure; Availability of Prior Exam |
| **Denominator Exclusions** | None |
| **Denominator Exceptions** | Medical or technical reason(s) documenting the prior exam and current exam are too dissimilar for a meaningful comparison. Examples include but are not limited to factors that may compromise measurement accuracy such as artifacts, interim hip, vertebral or wrist fracture, arthroplasty, severe degenerative changes or other technical or patient-related issues. |
| **Numerator** | Number of final reports for serial exams that include (1) an appropriate LSC statement referencing a facility's LSC values and (2) a statement regarding whether the measurement difference between the current exam and prior exam constitutes a change (difference is greater than LSC value) or does not (difference is less than LSC value). |
| **Numerator Exclusions** | None |
| **Numerator Data Elements** | Facility's LSC Values Documented; Difference Between Current and Prior Exam Documented |
| **Number of performance rates to be submitted** | 1 |
| **Indicate an Overall Performance Rate if more than 1** | N/A |
| **Performance Rate Description** | N/A |

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| **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** | To aid in determining the statistical significance of clinical measurement differences, the precision error in the form of Least Significant Change (LSC) should be calculated for each clinical DXA system and skeletal site. The LSC represents the smallest difference between two clinical BMD measurements on a single scanner that can be considered statistically significant with 95% confidence. When monitoring patients, the comparison the comparison should be made to prior DXA examinations of the same skeletal site and region of interest. The precision error and LSC of the specific scanner(s) and skeletal site should be ascertained and documented to determine if measured changes are statistically significant.<br><br>American College of Radiology - 2018 ACR-SPR-SSR Practice Parameter for the Performance of Dual-Energy X-Ray Absorptiometry (DXA)<br>International Society for Clinical Densitometry - Precision Assessment and Radiation Safety for Dual-Energy X-Ray Absorptiometry: Position Paper of the International Society for Clinical Densitometry |
| **Rationale** | Osteoporosis and low BMD is a major public health issue for millions of Americans aged 50 and older. Approximately 1.8 million Medicare beneficiaries sustained approximately 2.1 million osteoporotic fractures in 2016. One in every two women will develop a fragility fracture after age 50. Although osteoporosis is often considered a silent disease, its impact is not. Approximately 24% of those with a hip fracture will die within a year of the fracture. Furthermore, about 20% of |

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| | those sustaining a hip fracture require a nursing home stay and 60% do not return to pre-fracture functional level. In addition to the morbidity and mortality burden, the economic costs of osteoporotic fractures are substantial, being projected to reach $25.3 billion annually by 2025, an increase of 50%. Osteoporotic fragility fractures lead to more hospitalizations and hospital costs than myocardial infarction, stroke, or breast cancer. Clearly, optimal management of this substantial health problem is essential.<br><br>Osteoporosis diagnosis and management are currently suboptimal. Accurate DXA reporting is an essential component of high-quality osteoporosis detection and follow-up care. Radiologists now interpret the majority of these exams in the U.S., yet research demonstrates DXA interpretation errors are common. In one study, interpretation errors were present in 80% of patients; 42% of errors were likely to impact patient management decisions. The most common major errors were reporting incorrect information on BMD change (70%) and incorrect diagnosis (22%).<br><br>To improve DXA quality, it is imperative to mitigate such errors. This includes applying established best practices to correctly report BMD changes. A critical reporting element includes describing the widespread performance of precision assessment and including this into routine DXA reporting. The standard precision metric in BMD measurement is the repeatability coefficient, better known as the least significant change (LSC). Many final DXA reports do not currently include this metric and therefore do not adequately communicate the significance of BMD measurement changes or the technical quality of the acquisition.<br><br>The appropriate use of precision assessment in clinical practice is essential to determine if a measured BMD numerical difference in serial DXA exams is due to true physiological change or is due to unavoidable, random measurement error. This can be accomplished by understanding and measuring both inter- and intra-system measurement variations of DXA scanners. |
| **Specialty this measure applies to** | Radiology |
| **Measure Funding Source (Steward)** | American College of Radiology |


# Qualified Clinical Data Registry (QCDR) Measure Specification File

## RADIOLOGY

**Reporting Year: 2025**

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**

**2025 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,

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**AND**
**Patient procedure during the performance period (CPT):** 70450

**AND**
**Performed for suspected stroke* (EE055)**

**Denominator Exclusion:** 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*.

**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 verbiage indicating results are "normal" or "no acute abnormalities".*

**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

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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**:

1. Pop NO, Tit DM, Diaconu CC, Munteanu MA, Babes EE, Stoicescu M, Popescu MI, Bungau S. The Alberta Stroke Program Early CT score (ASPECTS): A predictor of mortality in acute ischemic stroke. Exp Ther Med. 2021 Dec;22(6):1371. doi: https://doi.org/10.3892/etm.2021.10805.
2. Schröder J, Thomalla G. A Critical Review of Alberta Stroke Program Early CT Score for Evaluation of Acute Stroke Imaging. Front Neurol. 2017 Jan 12;7:245. doi: https://doi.org/10.3389/fneur.2016.00245.
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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

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**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:** Traditional MIPS
**Risk adjustment:** No
**NQF Number:** Not applicable
**eCQM Number:** Not applicable

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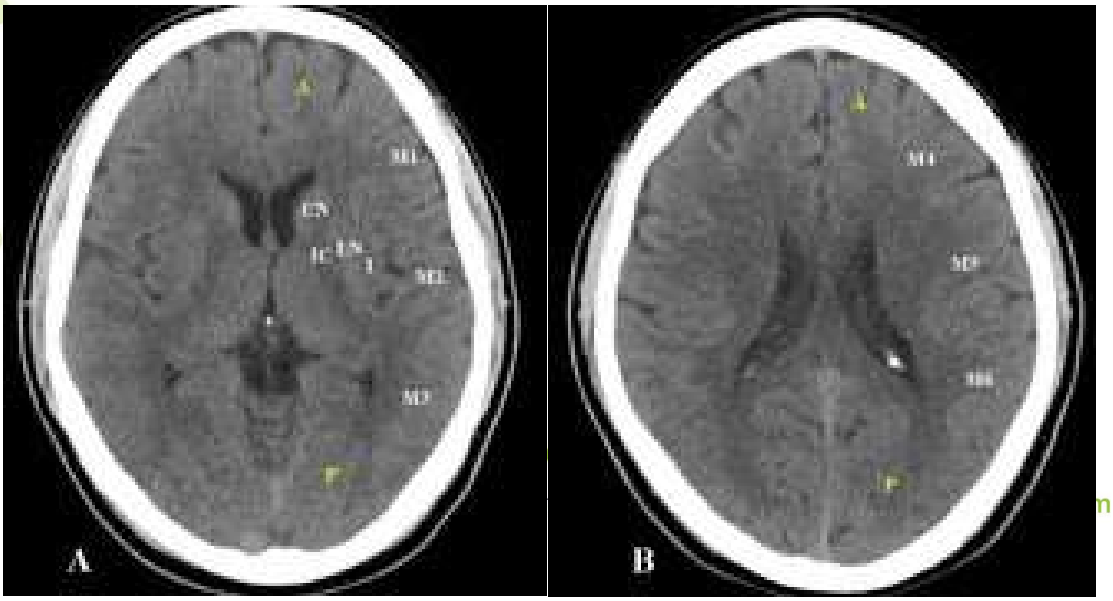
**APPENDIX:**

## 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 #MSN13: Screening Coronary Calcium Scoring for Cardiovascular Risk Assessment Including Coronary Artery Calcification Regional Distribution Scoring**
**- National Quality Strategy Domain: Effective Clinical Care**
**- Meaningful Measure Area: Preventative Care**

**2025 COLLECTION TYPE:**
QUALIFIED CLINICAL DATA REGISTRY QUALITY MEASURE (QCDR)

**MEASURE TYPE:**
Process

**DESCRIPTION:**
Percentage of patients, regardless of age, undergoing Coronary Calcium Scoring with a computed tomography (CT) of the heart, who have measurable coronary artery calcification (CAC) with total CACS, regional distribution scoring, AND whether or not the regional distribution/total CACS warrants further evaluation documented in the Final Report.

**INSTRUCTIONS:**
This measure is to be submitted **each time** a patient has a screening coronary calcium scoring test during the performance period. The diagnosis associated with this measure demonstrates a screening exam for the asymptomatic patient even if there are risk factors associated with the patient.

**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.

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**DENOMINATOR:**
All final reports for screening computed tomography (CT) heart, without contrast material, with quantitative evaluation of coronary calcium.

***DENOMINATOR NOTE:*** **Signifies that this CPT 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, regardless of age,
**AND**
**Patient procedure during the performance period (CPT):** 75571*
**AND**
CACS greater than zero (0) **(EE013)**

**Denominator Exclusion:**
Exam performed for surgical/pre-op clearance (DE013)
**OR**
Exam performed for sole purpose of assessing aortic valve (DE013)

**NUMERATOR:**
Final reports with documentation that indicates the Coronary Artery Calcium Score (CACS), including CACS regional reporting, was used to score that patient's total calcium score and risk stratification with reference made to whether regional distribution/total CACS does or does not warrant further evaluation.

***Numerator Note****: To meet measure requirements, the five regions must be referenced in the report along with a regional CACs score. Also, regional scores may not combine more than two regions. For instance, "Total CACS = 12. Left Main = 0, RCA&PDA = 2, PDA = 0, LAD = 0, LCx = 10" is considered acceptable. However, "Total CACS = 12. RCA = 0, PDA = 0, LAD & LCx & Left Main = 12" is NOT acceptable as this score combines more than two regions. Also, note that an Agatston score is synonymous with total CACS. If regional distribution/Total CACS does not warrant further evaluation, this must be clearly stated in the report.*

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**Numerator Options:**

***Performance Met:***

**PM001:** Final report includes total CACS as well as the regional CACS for each of these regions: the Left Main, LAD, LCx, RCA, and PDA AND references whether the regional distribution/total CACS DOES or DOES NOT warrant further evaluation.

**OR**

***Performance Not Met:***

**PNM01:** Final report does not include total CACS AND/OR regional CACS for each of these regions: the Left Main, LAD, LCx, RCA, and PDA AND/OR whether or not the regional distribution/total CACS warrants further evaluation.

**RATIONALE**:

Coronary Artery Calcium Score (CACS) is a tool for cardiovascular risk assessment. The risk assessment percentile is age based and the score and the percentile are reported separately. Typically, this is reported as a total calcium score and risk stratification is performed based on the total score.

In addition to the total score, reporting regional CACS distribution, would provide meaningful and prognostic information. The regional distribution is already calculated and totaled in order to derive the total CACS. The regional CAC distribution is however inconsistently reported.

Below is an example of the basic CACS. The regional distribution would further define the problem areas and risk.

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| CCS (Agaston) | Risk | Description |
|---|---|---|
| 0 | Non-identified | Negative test. Findings are consistent with a low risk of having a cardiovascular event in the next 5 years. |
| 1-10 | Minimal | Minimal atherosclerosis is present. Findings are consistent with a low risk of having a cardiovascular event in the next 5 years. |
| 11-100 | Mild | Mild coronary atherosclerosis is present. There is likely mild or minimal coronary stenosis. A mild risk of having CAD exists. |
| 101-400 | Moderate | Moderate calcium is detected in the coronary arteries and confirms the presence of atherosclerotic plaque. A moderate risk of having a cardiovascular event exists. |
| >400 | High | A high calcium score may be consistent with significant risk of having a cardiovascular event within the next 5 years |

The coronary artery calcium (CAC) score as assessed by CT imaging represents the totality of calcium burden throughout the coronary tree. There is voluminous and consistent literature documenting the prognostic power of this measure in asymptomatic individuals to predict incident coronary artery disease (CAD) events and mortality. Guidelines consider this a reasonable test to consider for individuals who are at intermediate risk by risk-scoring tools to refine a risk estimate, although whether management driven by CAC data is superior to that based on the risk tools alone is uncertain.

As the CAC score represents the total calcium burden, investigators have examined whether more specific description of calcium location and distribution may additionally inform prognostic estimates. In a study, using data from over 23,000 people who had been referred for calcium scoring, it was shown that within groupings with similar CAC scores, calcium deposition in a pattern consistent with multivessel CAD is associated with higher risk for mortality over 6 years of follow-up compared with a single-vessel pattern, and deposition in the left main is also associated with higher risk [3].

The risk associated with a certain level of total CAC may vary quite widely. If patterns suggest significantly higher risk, such as multivessel and particularly left main calcium, it

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would create a more compelling reason to consider further testing, such as stress testing for the extent of inducible ischemia, or conceivably to consider direct to catheterization if substantial left main calcium is seen, compared with only having a total CAC score. Thus, these data may change management, even in asymptomatic individuals.

**MEASURE TESTING AND GAP ANALYSIS:**

MSN coded 16,819 calcium scoring exams (CPT code 75571 and ICD-10 code Z13.6) in 2019 for dates of service between January 2nd and May 29th.

- We sampled 202 calcium scoring reports and found 89 reports with a CACS numeric value of 0 (zero).
- Of the remaining 113 reports with a CACS numeric value greater than 0 (zero) 22 did not include a regional distribution score. This represents 19% of the total research sample, which could greatly impact the patient population.
- If the findings were extrapolated over the entire sample frame, then 320 patients did not receive a regional distribution score and that poses a significant health risk.

**References**:

1. Blaha MJ, Mortensen MB, Kianoush S, Tota-Maharaj R, Cainzos-Achirica M. Coronary Artery Calcium Scoring: Is It Time for a Change in Methodology? JACC Cardiovasc Imaging. 2017 Aug;10(8):923-937. doi: https://doi.org/10.1016/j.jcmg.2017.05.007.
2. Sundaram B, Patel S, Bogot N, Ella A. Anatomy and Terminology for the Interpretation and Reporting of Cardiac MDCT: Part 1, Structured Report, Coronary Calcium Screening, and Coronary Artery Anatomy. American Journal of Roentgenology. 2009 Mar;192(3):574-583. doi: https://doi.org/10.2214/AJR.08.1177.
3. Tota-Maharaj R, Joshi PH, Budoff MJ, Whelton S, Zeb I, Rumberger J, Al-Mallah M, Blumenthal RS, Nasir K, Blaha MJ. Usefulness of regional distribution of coronary artery calcium to improve the prediction of all-cause mortality. Am J Cardiol. 2015 May 1;115(9):1229-34. doi: https://doi.org/10.1016/j.amjcard.2015.01.555.

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**Meaningful Measure Area:** Preventative Care
**NQS Domain:** Effective Clinical Care
**Measure Type:** Process
**Data Source:** Registry, RIS/VR System, Contracted third party data capture systems
**Care Setting(s):** Ambulatory; Ambulatory Care: Hospital; Ambulatory Care: Urgent Care; 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:** No
**Telehealth Measure:** No
**Proportion Measure Scoring:** Yes
**Continuous Measure Scoring:** No
**Ratio Measure Scoring:** No
**MIPS Reporting Option:** Traditional MIPS
**Risk adjustment:** No
**NQF Number:** Not applicable
**eCQM Number:** Not applicable

**SAMPLE CALCULATIONS:**

**Data Completeness=**
Performance Met (a=40 procedures) + Performance Not Met (c=40 procedures) = 80 procedures = **100.00%**
Eligible Population / Denominator (d=80 procedures) = 80 procedures

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

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**Quality ID #MSN15: Use of Thyroid Imaging Reporting and Data System (TI-RADS) in Final Report to Stratify Thyroid Nodule Risk**
**- National Quality Strategy Domain: Communication and Care Coordination**
**- Meaningful Measure Area: Appropriate Use of Healthcare**

**2025 COLLECTION TYPE:**
QUALIFIED CLINICAL DATA REGISTRY QUALITY MEASURE (QCDR)

**MEASURE TYPE:**
Process – High Priority

**DESCRIPTION:**
Percentage of patients, 19 years of age and older, undergoing ultrasound of the neck with findings of thyroid nodule(s) whose final report includes the TI-RADS assessment.

**INSTRUCTIONS:**
This measure is to be submitted **each time** a patient has an ultrasound of the neck with findings of thyroid nodule(s) during the performance period. The American College of Radiology (ACR) TI-RADS is designed to balance the benefit of identifying clinically important cancers against the risk and cost of subjecting patients with benign nodules or indolent cancers to biopsy and treatment. The ACR recommendations for follow-up ultrasound substantially mitigate the possibility that significant malignancies will remain undetected over time and are concordant with the increasing trend toward active surveillance ("watchful waiting") for low-risk thyroid cancer.

**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.

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**DENOMINATOR:**
All final reports for ultrasound of the neck on patients 19 years of age and older with findings of thyroid nodule(s).

***DENOMINATOR NOTE:*** **Signifies that this MSN Category I code may be a non-covered service under the MSN Part B Physician Fee Schedule (PFS) for this encounter. These non-covered services should be counted in the denominator population for MSN CQMs. This measure applies to every procedure billed under CPT 76536 that identifies a thyroid nodule, regardless of the purpose of the order (e.g., US Soft Tissue Head/Neck, US of Thyroid, etc. are all billed under CPT 76536, thus are eligible for this measure).*

**Denominator Criteria (Eligible Cases):**
All patients, 19 years of age and older,
**AND**
**Patient procedure during the performance period (CPT):** 76536*
**AND**
**Finding of thyroid nodule(s) (ICD-10-CM):** E04.1, E04.2, E04.8, E05.10, E05.11, E05.20, E05.21, E04.0

**Denominator Exclusion:** None

**NUMERATOR:**
Final reports with positive findings of thyroid nodule(s) that include a TI-RADS Score and recommendations for follow-up based on appropriate scoring and treatment protocols according to the TI-RADS assessment.

**Numerator Options:**
***Performance Met:***
**PM004:** Final report includes a TI-RADS Score and recommendations for follow-up based on appropriate scoring and treatment protocols according to the TI-RADS assessment.

**OR**

***Performance Not Met:***
**PNM04:** Final report does not include a TI-RADS Score and recommendations for follow-up based on appropriate scoring and treatment protocols according to the TI-RADS assessment.

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**OR**

***Denominator Exception:***
**PE004:** Documentation that the patient has co-morbidities with extremely shortened life span and/or a history of thyroid cancer and/or has multiple small nodules which do not meet criteria for TI-RADS assignment, patient scheduled visit was for a fine needle aspiration which was not performed, follow-up nodule with TI-RADS score and no significant change noted, and/or documentation of other reason(s) that exempt the patient from meeting criteria for TI-RADS assessment.

**RATIONALE**:
Thyroid nodules are common, with a prevalence of up to 68% of adults on ultrasound. Fine needle aspiration (FNA) is the most effective test in determining if a thyroid nodule is malignant and occasionally surgery is required to achieve a definitive diagnosis. But most thyroid nodules are benign and not all nodules require FNA or surgery. Over diagnosis of thyroid cancer results in many detected thyroid cancers without affecting mortality between 45 to 80% of cases. Recent attention has been focused on developing a non-invasive system, called Thyroid Imaging, Reporting and Data System (TI-RADS), with the use of ultrasound for risk stratification of thyroid nodules to identify clinically significant malignancies while reducing the number of biopsies performed on benign nodules.

The ACR released a white paper in 2017 on the use of the TI-RADS. TI-RADS is based on ACR recommended standardized terms for ultrasound reporting of thyroid nodules. Selected ultrasound features of thyroid nodules are combined into a score to identify nodules that warrant biopsy or sonographic follow-up. The use of TI-RADS to risk stratify incidental nodules may result in fewer unnecessary biopsies. Below are the basics of the scoring, classification and recommendations for thyroid nodules.

**Scoring and Classification:**

- **TR1**: 0 points
  - benign
- **TR2**: 2 points
  - not suspicious

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- **TR3**: 3 points
  - mildly suspicious
- **TR4**: 4-6 points
  - moderately suspicious
- **TR5**: ≥7 points
  - highly suspicious

**Recommendations:**

- **TR1**: no FNA required
- **TR2**: no FNA required
- **TR3**: ≥1.5 cm follow up, ≥2.5 cm FNA
  - follow up: 1, 3 and 5 years
- **TR4**: ≥1.0 cm follow up, ≥1.5 cm FNA
  - follow up: 1, 2, 3 and 5 years
- **TR5**: ≥0.5 cm follow up, ≥1.0 cm FNA
  - annual follow up for up to 5 years

Biopsy is recommended for suspicious lesions (TR3 - TR5) with the above size criteria. If there are multiple nodules, the two with the highest ACR TI-RADS grades should be sampled (rather than the two largest).

Interval enlargement on follow up is felt to be significant if there is an increase of 20% and 2 mm in two dimensions, or a 50% increase in volume. If the ACR TI-RADS level increases between scans, an interval scan the following year is again recommended.

In developing the ACR TI-RADS, the ACR committee strived to account for the discrepancy between the sharp rise in the diagnosis and treatment of thyroid cancer resulting from increased detection and biopsy and the lack of commensurate improvement in long-term outcomes. This suggested that diagnosing every thyroid malignancy should not be the goal. Like other professional societies, the ACR recommends biopsy of high-suspicion nodules only if they are 1 cm or larger. As well, they advocate biopsy of nodules that have a low risk for malignancy only when they measure 2.5 cm or more.

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ACR recommendations for follow-up ultrasound substantially mitigate the possibility that significant malignancies will remain undetected over time and are concordant with the increasing trend toward active surveillance ("watchful waiting") for low-risk thyroid cancer.

In the ACR TI-RADS, recommendations for FNA or ultrasound follow-up are based on a nodule's ACR TI-RADS level and its maximum diameter. For risk levels TR3 through TR5, the chart presents a size threshold at or above which FNA should be recommended. They also defined lower size limits for recommending follow-up ultrasound for TR3, TR4, and TR5 nodules to limit the number of repeat sonograms for those that are likely to be benign or not clinically significant.

The following article titled "Thyroid Imaging Reporting and Data System Reduces Biopsies" was published by Diagnostic Imaging Staff on April 18, 2018:

"Criteria from the American College of Radiology (ACR) Thyroid Imaging Reporting and Data System (TI-RADS) offers a meaningful reduction in the number of thyroid nodules recommended for biopsy, according to a study published in the journal Radiology.

Researchers from several states performed a retrospective study to compare the biopsy rate and diagnostic accuracy before and after applying ACR TI-RADS criteria for thyroid nodule evaluation. Eight radiologists with three to 32 years of experience in thyroid ultrasonography were asked to review the ultrasound features of 100 thyroid nodules that were cytologically proven and/or pathologically proven. Nodules evaluated in five US categories and biopsy recommendations were provided based on the radiologists' practice patterns without knowledge of ACR TI-RADS criteria. Three other expert radiologists were reference standard readers for the imaging findings. ACR TI-RADS criteria were retrospectively applied to the features assigned by the eight radiologists to produce biopsy recommendations. Comparison was made for biopsy rate, sensitivity, specificity, and accuracy.

The results showed 15 of the 100 nodules (15 percent) were malignant. The mean number of nodules recommended for biopsy by the eight radiologists was 80 ± 16 (standard deviation) based on their own practice patterns and 57 ± 11 with retrospective application of ACR TI-RADS criteria.

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Without ACR TI-RADS criteria:

- Sensitivity 95 percent
- Specificity 20 percent
- Accuracy 28 percent

With ACR TI-RADS criteria:

- Sensitivity 92 percent
- Specificity 44 percent
- Accuracy 52 percent

Expert consensus:

- Sensitivity 87 percent
- Specificity 51 percent
- Accuracy 56 percent

The researchers noted that although fewer malignancies were recommended for biopsy with ACR TI-RADS criteria, the majority met the criteria for follow-up US. Only three of 120 (2.5 percent) malignancy encounters required no follow-up or biopsy. Expert consensus recommended biopsy in 55 of 100 nodules with ACR TI-RADS criteria.

Not only did the ACR TI-RADS criteria offer a meaningful reduction in the number of thyroid nodules recommended for biopsy, the researchers wrote, they significantly improve the accuracy of recommendations for nodule management."

**References**:

1. Tessler FN, Middleton WD, Grant EG, Hoang JK, Berland LL, Teefey SA, Cronan JJ, Beland MD, Desser TS, Frates MC, Hammers LW, Hamper UM, Langer JE, Reading CC, Scoutt LM, Stavros AT. ACR Thyroid Imaging, Reporting and Data System (TI-RADS): White Paper of the ACR TI-RADS Committee. J Am Coll Radiol. 2017 May;14(5):587-595. doi: https://doi.org/10.1016/j.jacr.2017.01.046.
2. Grant EG, Tessler FN, Hoang JK, Langer JE, Beland MD, Berland LL et al. Thyroid ultrasound reporting lexicon: White paper of the ACR thyroid imaging, reporting and data system (TIRADS) committee. Journal of the American College of Radiology. 2015 Jan 1;12(12):1272-1279. doi: https://doi.org/10.1016/j.jacr.2015.07.011.

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3. Ahmadi S, Oyekunle T, Jiang X', Scheri R, Perkins J, Stang M, Roman S, Sosa JA. A Direct Comparison of the Ata and TI-RAFS Ultrasound Scoring Systems. Endocr Pract. 2019 May;25(5):413-422. doi: https://doi.org/10.4158/EP-2018-0369.
4. Hoang JK, Middleton WD, Farjat AE, Langer JE, Reading CC, Teefey SA, Abinanti N, Boschini FJ, Bronner AJ, Dahiya N, Hertzberg BS, Newman JR, Scanga D, Vogler RC, Tessler FN. Reduction in Thyroid Nodule Biopsies and Improved Accuracy with American College of Radiology Thyroid Imaging Reporting and Data System. Radiology. 2018 Apr;287(1):185-193. doi: https://doi.org/10.1148/radiol.2018172572.
5. Li W, Wang Y, Wen J, Zhang L, Sun Y. Diagnostic Performance of American College of Radiology TI-RADS: A Systematic Review and Meta-Analysis. American Journal of Roentgenology. 2021 Mar;216(1):38-47. doi: https://doi.org/10.2214/AJR.19.22691.
6. Abou Shaar B, Meteb M, Awad El-Karim G, Almalki Y. Reducing the Number of Unnecessary Thyroid Nodule Biopsies With the American College of Radiology (ACR) Thyroid Imaging Reporting and Data System (TI-RADS). Cureus. 2022 Mar 13;14(3):e23118. doi: https://doi.org/10.7759/cureus.23118.

**Meaningful Measure Area:** Appropriate Use of Healthcare
**NQS Domain:** Communication and Care Coordination
**Measure Type:** Process
**Data Source:** Registry, RIS/VR System, Contracted third party data capture systems
**Care Setting(s):** Ambulatory Care: Hospital; Emergency Department and Services; Hospital; Hospital Inpatient; Hospital Outpatient; Imaging Facility; Outpatient Services; Ambulatory
**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:** Traditional MIPS

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**Risk adjustment:** No
**NQF Number:** Not applicable
**eCQM Number:** Not applicable

**SAMPLE CALCULATIONS:**

**Data Completeness=**
Performance Met (a=30 procedures) + Denominator Exception (b=20 procedures) + Performance Not Met (c=20 procedures) = 70 procedures = **87.50%**
Eligible Population / Denominator (d=80 procedures) = 80 procedures

**Performance Rate=**
Performance Met (a=30 procedures) = 30 procedures = **60.00%**
Data Completeness Numerator (70 procedures) – Denominator Exception (b=20 procedures) = 50 procedures

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**Quality ID #QMM16: IVC Filter Management Confirmation**
**- National Quality Strategy Domain: Patient Safety**
**- Meaningful Measure Area: Preventable Healthcare Harm**

**2025 COLLECTION TYPE:**
QUALIFIED CLINICAL DATA REGISTRY QUALITY MEASURE (QCDR)

**MEASURE TYPE:**
Process – High Priority

**DESCRIPTION:**
Percentage of final reports for eligible exams* where an IVC filter is present and the radiologist included a statement of recommendation in the Impression of the report for the treating clinician to:
1) Assess if there is a management plan in place for the patient's IVC filter, and
2) If there is no established management plan for the patient's IVC filter, refer the patient to a relevant specialist on a nonemergent basis for evaluation.

**Eligible exams are limited to x-ray (XR), computed tomography (CT), and computed tomography angiography (CTA) exams of the abdomen and/or pelvis.*

**INSTRUCTIONS:**
This measure is to be submitted **each time** an XR, CT, or CTA of the abdomen and/or pelvis is reported for a patient with an IVC filter during the reporting period. Measure performance focuses on the radiologist's inclusion of a statement of recommendation in in the Impression of the report for the treating clinician to:
1) Assess if there is a management plan in place for the patient's IVC filter, and
2) If there is no established management plan for the patient's IVC filter, refer the patient to a relevant specialist on a nonemergent basis for evaluation.

**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

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numerator options included in this specification are used to submit the quality actions as allowed by the measure.

**DENOMINATOR:**
All final reports for XR, CT, and CTA of the abdomen and/or pelvis for patients with an IVC filter in place.

**Denominator Criteria (Eligible Cases):**
All patients, regardless of age,
**AND**
**Patient procedure during the performance period (CPT):**
**Abdomen**: 74018, 74019, 74021, 74022, 74150, 74160, 74170, 74174, 74175, 74176, 74177, 74178
**Pelvis**: 72170, 72190, 72191, 72192, 72193, 72194
**AND**
Final report documents IVC filter present **(EE016)**

**Denominator Exclusion:** None

**NUMERATOR:**
Final reports for patients with an IVC filter in place that include a statement in the Impression by the radiologist recommending the treating clinician to:
1) Assess if there is a management plan in place for the patient's IVC filter, and
2) If there is no established management plan for the patient's IVC filter, refer the patient to a relevant specialist on a nonemergent basis for evaluation.

**Numerator Options:**
***Performance Met:***
**PM016:** Final report includes a documented statement of recommendation by the radiologist in the Impression for the treating clinician to: 1) Assess if there is a management plan in place for the patient's IVC filter, and 2) If there is no established management plan for the patient's IVC filter, refer the patient to a relevant specialist on a nonemergent basis for evaluation.

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**OR**

***Performance Not Met:***

**PNM16:** Final report does not include a documented statement of recommendation by the radiologist in the impression for the treating clinician to: 1) Assess if there is a management plan in place for the patient's IVC filter, and 2) if there is no established management plan for the patient's IVC filter, refer the patient to a relevant specialist on a nonemergent basis for evaluation.

**OR**

***Denominator Exception:***

**PE016:** Documentation that study was ordered for the purpose of monitoring an IVC filter and/or documentation of medical reason(s) for not entering statement of recommendation by the radiologist for IVC filter plan, such as patients with a limited life expectancy, other medical reason(s).

***Numerator Note:***

*For Inpatients receiving multiple imaging studies during their Inpatient stay, it is acceptable for the radiologist to document on each subsequent study a reference back to the initial study dated xx/xx/xxxx for the statement recommendation on IVC management.*

**RATIONALE:**

IVC filter retrieval rates in clinical practice have been shown to be generally low, with at least one study documenting a retrieval rate under 15% among all provider specialty groups for the Medicare population [5, 6]. IVC filters are frequently used as an alternative or supplemental tool to prevent pulmonary embolism in patients with known thromboembolic disease and as a prophylactic tool to prevent pulmonary embolism in patients at high risk of developing thromboembolic disease [2, 3, 4] Complications of indwelling IVC filters include filter movement and embolization, filter penetration of the IVC wall with possible penetration of adjacent organs, filter tip embedding, filter fracture and filter-associated thrombus. These complications can potentially be symptomatic for the patient and/or lead to subsequent serious complications such as bleeding and organ perforation [1, 4].

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Due to the risk of these complications, IVC filters should be removed if possible when they are no longer clinically necessary. Potential contributors to the low retrieval rates include lack of physician initiative to consider filter retrieval and loss of follow-up of patients [7].

While current MIPS measure #421 addresses removal of IVC filters within 3 months of insertion, #421 does not address the role of diagnostic radiologists in improving IVC filter retrieval rates by promoting assessment for indwelling IVC filter management plans and referral to an interventional clinician for those patients who do not have a management plan in place. Including Diagnostic Radiologists would vastly increase the identification of the number of patients with IVC filters, particularly those that have had an IVC for an extended period of time (those at highest risk for complications).

**References:**

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3. Caplin DM, Nikolic B, Kalva SP, Ganguli S, Saad WE, Zuckerman DA; Society of Interventional Radiology Standards of Practice Committee. Quality improvement guidelines for the performance of inferior vena cava filter placement for the prevention of pulmonary embolism. J Vasc Interv Radiol. 2011 Nov;22(11):1499-506. doi: https://doi.org/10.1016/j.jvir.2011.07.012.
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5. Duszak R Jr, Parker L, Levin DC, Rao VM. Placement and removal of inferior vena cava filters: national trends in the medicare population. J Am Coll Radiol. 2011 Jul;8(7):483-9. doi: https://doi.org/10.1016/j.jacr.2010.12.021.
6. Morris E, Duszak R Jr, Sista AK, Hemingway J, Hughes DR, Rosenkrantz AB. National Trends in Inferior Vena Cava Filter Placement and Retrieval Procedures in the Medicare Population Over Two Decades. J Am Coll Radiol. 2018 Aug;15(8):1080-1086. doi: https://doi.org/10.1016/j.jacr.2018.04.024.
7. Morales JP, Li X, Irony TZ, Ibrahim NG, Moynahan M, Cavanaugh KJ Jr. Decision analysis of retrievable inferior vena cava filters in patients without pulmonary embolism. J Vasc Surg Venous Lymphat Disord. 2013 Oct;1(4):376-84. doi: https://doi.org/10.1016/j.jvsv.2013.04.005.

**Meaningful Measure Area:** Preventable Healthcare Harm
**NQS Domain:** Patient Safety
**Measure Type:** Process
**Data Source:** Registry, RIS/VR System, Contracted third party data capture systems, Claims, Hybrid
**Care Setting(s):** All Settings
**Measure Steward:** MSN Healthcare Solutions, LLC
**Number of Performance Rates:** 1
**Inverse Measure:** No
**High Priority Measure:** Yes – Patient Safety
**Telehealth Measure:** No
**Proportion Measure Scoring:** Yes
**Continuous Measure Scoring:** No
**Ratio Measure Scoring:** No
**MIPS Reporting Option:** Traditional MIPS
**Risk adjustment:** No
**NQF Number:** Not applicable
**eCQM Number:** Not applicable

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**SAMPLE CALCULATIONS:**

**Data Completeness =**

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

**Performance Rate =**

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

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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**

**2025 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** during the reporting period a female pelvic ultrasound reports a finding that qualifies for description and management under the ORADS criteria. 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

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

**Denominator Note:** *O-RADS applies only 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 ORADS 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 a patient's recommendation is "N/A" or*

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*"None" according to the O-RADS criteria, the radiologist should state "No imaging follow-up required" in the final report. Reference to O-RADS criteria while describing lesion and making recommendations would also suffice.*

**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).

**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:

| O-RADS Score | Risk Category [IOTA Model] | Lexicon Descriptors | | Management | |
|---|---|---|---|---|---|
| | | | | Pre-menopausal | Post-menopausal |
| 0 | Incomplete Evaluation [N/A] | N/A | | Repeat study or alternate study | |
| 1 | Normal Ovary [N/A] | Follicle defined as a simple cyst ≤ 3 cm | | None | N/A |
| | | Corpus Luteum ≤ 3cm | | | |
| 2 | Almost Certainly Benign [< 1%] | Simple cyst | ≤ 3 cm | N/A | None |
| | | | > 3 cm to 5 cm | None | Follow up in 1 year. * |
| | | | > 5 cm but < 10 cm | Follow up in 8 - 12 weeks | |
| | | Classic Benign Lesions | See **Figure 3** for separate descriptors | See **Figure 3** for management strategies | |
| | | Non-simple unilocular cyst, smooth inner margin | ≤ 3 cm | None | Follow up in 1 year * If concerning, US specialist or MRI |
| | | | > 3 cm but < 10 cm | Follow-up in 8 - 12 weeks If concerning, US specialist | US specialist or MRI |
| 3 | Low Risk Malignancy [1-<10%] | Unilocular cyst ≥ 10 cm (simple or non-simple) | | US specialist or MRI Management by gynecologist | |
| | | Typical dermoid cysts, endometriomas, hemorrhagic cysts ≥ 10 cm | | | |
| | | Unilocular cyst, any size with irregular inner wall <3 mm height | | | |
| | | Multilocular cyst < 10 cm, smooth inner wall, CS = 1-3 | | | |
| | | Solid smooth, any size, CS = 1 | | | |
| 4 | Intermediate Risk [10- < 50%] | Multilocular cyst, no solid component | ≥ 10 cm, smooth inner wall, CS = 1-3 | US specialist or MRI Management by gynecologist with GYN-oncologist consultation or solely by GYN-oncologist | |
| | | | Any size, smooth inner wall, CS = 4 | | |
| | | | Any size, irregular inner wall and/or irregular septation, any color score | | |
| | | Unilocular cyst with solid component | Any size, 0-3 papillary projections, CS = any | | |
| | | Multilocular cyst with solid component | Any size, CS = 1-2 | | |
| | | Solid | Smooth, any size, CS = 2-3 | | |
| 5 | High Risk [≥ 50%] | Unilocular cyst, any size, ≥ 4 papillary projections, CS = any | | GYN-oncologist | |
| | | Multilocular cyst with solid component, any size, CS = 3-4 | | | |
| | | Solid smooth, any size, CS = 4 | | | |
| | | Solid irregular, any size, CS = any | | | |
| | | Ascites and/or peritoneal nodules** | | | |

**Figure 2:** Image shows Ovarian-Adnexal Reporting and Data System (O-RADS) US risk stratification and management system. * = At a minimum, at least 1-year follow-up showing stability or decrease in size is recommended with consideration of annual follow-up of up to 5 years, if stable. However, there is currently a paucity of evidence for defining optimal duration or interval of timing for surveillance. ** = Presence of ascites with category 1–2 lesion, must consider other malignant or nonmalignant etiologies of ascites. CS = color score, GYN = gynecologic, IOTA = International Ovarian Tumor Analysis, N/A = not applicable. Adapted, with permission, from the American College of Radiology.

No current MIPS measure addresses this need for effective description of ovarian/adnexal lesions and subsequent management. Without appropriate upfront

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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.

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Small findings such as those in premenopausal patients are fairly common and most certainly benign, therefore, typically should not lead to follow-up imaging.

*TABLE #2*

| Actual Recommendation | SIZE (cm) | AGE | Recommendation Had O-RADS been Used |
|---|---|---|---|
| 3 month follow-up is recommended | 1.9 | 20 | No follow-up |
| A follow-up pelvic US is recommended 6 to 12 weeks to document stability vs resolution | 2.2 | 32 | No follow-up |
| A follow-up US after 6 weeks may confirm that it has resolved or that it is smaller | 2.2 | 38 | No follow-up |
| Follow-up as clinically recommended | 2.5* | 35 | No follow-up |
| A follow-up transabdominal and endovaginal pelvic US in 6 weeks time is recommended to assure stability or resolution | 2.7 | 43 | No follow-up |
| Consider follow-up sonography in 4 to 6 months | 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. Andreotti RF, Timmerman D, Strachowski LM, Froyman W, Benacerraf BR, Bennett GL, Bourne T, Brown DL, Coleman BG, Frates MC, Goldstein SR, Hamper UM, Horrow MM, Hernanz-Schulman M, Reinhold C, Rose SL, Whitcomb BP, Wolfman WL, Glanc P. O-RADS US Risk Stratification and Management System: A Consensus Guideline from the ACR Ovarian-Adnexal Reporting and Data System Committee. Radiology. 2020 Jan;294(1):168-185. doi: https://doi.org/10.1148/radiol.2019191150.
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,

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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.
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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:** Traditional MIPS
**Risk adjustment:** No
**NQF Number:** Not applicable
**eCQM Numbe**r: Not applicable

**SAMPLE CALCULATIONS:**

**Data Completeness =**

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

**Performance Rate =**

$$\frac{\text{Performance Met (a=40 procedures)}}{\text{Data Completeness Numerator (100 procedures) - Denominator Exception (20 procedures)}} = \frac{40 \text{ procedures}}{80 \text{ procedures}} = 50.00\%$$

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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**

**2025 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

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**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 Exclusions:**

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:*
  - *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/*

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- *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 recommendation could include, but is 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 (must cite model), or patient is transgender and model does not take into account transgender patients (must cite model).

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**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 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).

**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 (ie, 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 STATEMENTS:**

**American Cancer Society:**

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

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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:**
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 and Society of Breast Imaging:**
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].

**References:**

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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:** Traditional MIPS
**Risk adjustment:** No
**NQF Number:** Not applicable
**eCQM Number:** Not applicable

**SAMPLE CALCULATIONS:**

**Data Completeness =**

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

**Performance Rate =**

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

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**Quality ID #QMM19: DEXA/DXA and Fracture Risk Assessment for Patients with Osteopenia**
**- National Quality Strategy Domain: Effective Clinical Care**
**- Meaningful Measure Area: Patient-Focused Episode of Care**

**2025 COLLECTION TYPE:**
QUALIFIED CLINICAL DATA REGISTRY QUALITY MEASURE (QCDR)

**MEASURE TYPE:**
Process

**DESCRIPTION:**
All patients with osteopenia, 40-90 years of age at time of service, who undergo DEXA scans for bone density who have their FRAX score reported and a statement of whether they meet criteria for pharmacologic treatment to prevent osteoporosis included in the final report.

**INSTRUCTIONS:**
This measure is to be submitted **each time** an eligible patient has a DEXA scan during the performance period. The FRAX score indicates fracture risk for asymptomatic and symptomatic patients. FRAX should be reported and reviewed against published guidelines* to determine if patient meets criteria for pharmacologic treatment to prevent osteoporosis.

**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 DEXA scans

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**Denominator Criteria (Eligible Cases):**
All patients, 40 to 90 years of age at time of service,
**AND**
**Patient procedure during the performance period (CPT):** 77080, 77081, 77085, 77086
**AND**
**Diagnosis of osteopenia (ICD-10-CM):** M85.80, M85.811, M85.812, M85.819, M85.821, M85.822, M85.829, M85.831, M85.832, M85.839, M85.841, M85.842, M85.849, M85.851, M85.852, M85.859, M85.861, M85.862, M85.869, M85.871, M85.872, M85.879, M85.88, M85.89, M85.9

**Denominator Exclusion:** None

**NUMERATOR:**
Final reports for patients 40 to 90 years of age at time of service, with documentation to indicate the patient's 10-year Fracture Risk (FRAX) AND whether the patient meets the criteria for pharmacological treatment to prevent of osteoporosis per published guidelines*.

**Numerator Options:**
***Performance Met:***
**PM019:** Final report includes a documented FRAX score in the Physician Dictated Report AND whether the patient does or does not meet the criteria for pharmacological treatment recommendations for prevention of osteoporosis per published guidelines*.

**OR**

***Performance Not Met:***
**PNM19:** Final report does not include a documented FRAX score in the Physician Dictated Report AND/OR whether the patient does or does not meet the criteria for pharmacological treatment recommendations for prevention of osteoporosis per published guidelines*.

**OR**

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***Denominator Exception:***

**PE019:** Documentation that patient's age is outside the parameters of the FRAX risk tool used by your institution/equipment (must document this AND the name of the FRAX risk tool used by your institution to qualify for exception).

**OR**

**PE019:** Documentation of other patient reason(s) why final report does not include a documented FRAX score AND/OR reference to pharmacological treatment (such as, patient is NOT post-menopausal, patient actively being treated for osteopenia, T-Score(s) for mandatory regions required to calculate FRAX is unavailable, patient refusal to cooperate, diagnosis of osteoporosis, etc.).

****Numerator Note:***

- *Lack of FRAX software is not an acceptable denominator exception.*
- *Final report **must** state the published guidelines referenced to determine if patient meets criteria for pharmacological treatment to prevent of osteoporosis (such as, "per Bone Health and Osteoporosis Foundation's guidelines").*
- *The bone density should be reported, and additional demographic and risk factors assessed, to determine the FRAX score for each patient.*
- *The phrase "FDA-approved therapies" may be substituted for "pharmacological treatment"*

**RATIONALE:**

Osteoporosis-related fractures (low-trauma or fragility fractures) cause substantial disability, health care costs, and mortality among postmenopausal women and older men. Epidemiologic studies indicate that at least half the population burden of osteoporosis-related fractures affects persons with osteopenia (low bone density), who comprise a larger segment of the population than those with osteoporosis. The public health burden of fractures will fail to decrease unless the subset of patients with low bone density who are at increased risk for fracture are identified and treated. Risk stratification for medically appropriate and cost-effective treatment is facilitated by the World Health Organization (WHO) FRAX algorithm, which uses clinical risk factors, bone mineral density, and country-specific fracture and mortality data to quantify a patient's

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10-year probability of a hip or major osteoporotic fracture. Included risk factors comprise femoral neck bone mineral density, prior fractures, parental hip fracture history, age, gender, body mass index, ethnicity, smoking, alcohol use, glucocorticoid use, rheumatoid arthritis, and secondary osteoporosis. FRAX was developed by the WHO to be applicable to both postmenopausal women and men aged 40 to 90 years; the National Osteoporosis Foundation Clinician's Guide focuses on its utility in postmenopausal women and men aged >50 years. It is validated to be used in untreated patients only. The current National Osteoporosis Foundation Guide recommends treating patients with FRAX 10-year risk scores of ≥ 3% for hip fracture or ≥ 20% for major osteoporotic fracture, to reduce their fracture risk. Additional risk factors such as frequent falls, not represented in FRAX, warrant individual clinical judgment. FRAX has the potential to demystify fracture risk assessment in primary care for patients with low bone density, directing clinical fracture prevention strategies to those who can benefit most [6].

**GAP ANALYSIS:**
In a review of 200 DXA reports, only 68 (34%) documented the patient's fracture risk.

**ECONOMIC ANALYSIS:**
Annually, two million fractures are attributed to osteoporosis, causing more than 432,000 hospital admissions, almost 2.5 million medical office visits, and about 180,000 nursing home admissions in the USA [1].

Medicare currently pays for approximately 80 % of these fractures, with hip fractures accounting for 72 % of fracture costs. Due in part to an aging population, the cost of care is expected to rise to $25.3 billion by 2025 [2].

Despite the availability of cost-effective and well-tolerated treatments to reduce fracture risk, only 23 % of women age 67 or older who have an osteoporosis-related fracture receive either a BMD test or a prescription for a drug to treat osteoporosis in the 6 months after the fracture [3].

Clinical risk factors included in the FRAX Tool:

- Current age
- Rheumatoid arthritis

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- Gender
- Secondary causes of osteoporosis: type 1 (insulin dependent) diabetes, osteogenesis imperfecta in adults, untreated long-standing hyperthyroidism, hypogonadism or premature menopause (3 months (ever)

Use of WHO FRAX® in the USA FRAX® was developed to calculate the 10-year probability of a hip fracture and the 10-year probability of a major osteoporotic fracture (defined as clinical vertebral, hip, forearm, or proximal humerus fracture), taking into account femoral neck BMD and clinical risk factors [4]. The FRAX® algorithm is available at https://www.bonehealthandosteoporosis.org/ as well as at https://www.sheffield.ac.uk/FRAX/. It is also available on newer DXA machines or with software upgrades that provide the FRAX® scores on the bone density report. The WHO algorithm used in this Guide was calibrated to US fracture and mortality rates; therefore, the fracture risk figures herein are specific for the US population. Economic modeling was performed to identify the 10-year hip fracture risk above which it is cost-effective, from the societal perspective, to treat with pharmacologic agents. The US-based economic modeling is described in one report [5].

**References:**

1. Office of the Surgeon General (US). Bone Health and Osteoporosis: A Report of the Surgeon General. Rockville (MD): Office of the Surgeon General (US); 2004.
2. Burge R, Dawson-Hughes B, Solomon DH, Wong JB, King A, Tosteson A. Incidence and economic burden of osteoporosis-related fractures in the United States, 2005-2025. J Bone Miner Res. 2007 Mar;22(3):465-75. doi: https://doi.org/10.1359/jbmr.061113.
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4. Kanis JA; on behalf of the World Health Organization Scientific Group. Assessment of osteoporosis at the primary health care level. University of Sheffield, UK: World Health Organization Collaborating Center for Metabolic Bone Diseases. 2007. https://www.sheffield.ac.uk/FRAX/pdfs/WHO_Technical_Report.pdf.

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8. Bone Health and Osteoporosis Foundation Clinician Guide to Prevention and Treatment of Osteoporosis. 2022. https://bonesource.org/clinical-guidelines.

**Meaningful Measure Area:** Patient-Focused Episode of Care
**NQS Domain:** Effective Clinical Care
**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:** No
**Telehealth Measure:** No
**Proportion Measure Scoring:** Yes
**Continuous Measure Scoring:** No
**Ratio Measure Scoring:** No
**MIPS Reporting Option:** Traditional MIPS
**Risk adjustment:** No
**NQF Number:** Not applicable
**eCQM Number:** Not applicable

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## SAMPLE CALCULATIONS:

**Data Completeness =**

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

**Performance Rate =**

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

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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**

**2025 COLLECTION TYPE:**
QUALIFIED CLINICAL DATA REGISTRY QUALITY MEASURE (QCDR)

**MEASURE TYPE:**
Process – High Priority

**DESCRIPTION:**
Percentage of emphysema patients, 50-77 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.

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

**Denominator Criteria (Eligible Cases):**
All patients, 50 to 77 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 Exclusions:**
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**

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***Performance Not Met:***

**PNM23:** Final report does <u>not</u> include all of the following:

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

**<u>OR</u>**

***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.).

**<u>RATIONALE</u>:**

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 [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

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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.

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**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].

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** |



**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]

**References:**

1. Printz C. Lung cancer alliance praises CMS decision to cover lung cancer screenings. *Cancer*. 2015 Apr 15;121(8):1157. doi: 10.1002/cncr.29376. PMID: 25855332.

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11. Centers For Disease Control And Prevention. National Center For Health Statistics. CDC WONDER On-Line Database, Compiled from Compressed Mortality File 1999-2016 Series 20 No. 2V, 2017.
12. The U.S. The United States Preventive Services Task Force. Final Recommendation Statement: Lung cancer: Screening. 2021 Mar 9.

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https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/lung-cancer-screening#fullrecommendationstart.

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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:** Traditional MIPS
**Risk adjustment:** No
**NQF Number:** Not applicable
**eCQM Number:** Not applicable

**SAMPLE CALCULATIONS:**

**Data Completeness =**

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

**Performance Rate =**

$$\frac{\text{Performance Met (a=40 procedures)}}{\text{Data Completeness Numerator (100 procedures) - Denominator Exception (20 procedures)}} = \frac{40 \text{ procedures}}{80 \text{ procedures}} = 50.00\%$$

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**Quality ID #QMM24: Acute Rib Fracture Numbering on ED Trauma Patients**
**- National Quality Strategy Domain: Effective Clinical Care**
**- Meaningful Measure Area: Patient Focused Episode of Care**

**2025 COLLECTION TYPE:**
QUALIFIED CLINICAL DATA REGISTRY QUALITY MEASURE (QCDR)

**MEASURE TYPE:**
Process – High Priority

**DESCRIPTION:**
All patients, regardless of age, undergoing a CT/CTA of the chest in the Emergency Department with a diagnosis of acute rib fracture(s), who have documentation of rib fracture numbering, laterality of rib fracture(s), and presence or absence of ribs fractured in two or more places in the final report.

**INSTRUCTIONS:**
This measure is to be submitted **each time** an eligible patient has CT/CTA of the chest with a diagnosis of one or more acute rib fractures. Proper documentation of the number, laterality of rib fractures, and presence or absence of ribs fractured in two or more places is pertinent information to assist the ordering provider in choosing the most appropriate care plan for the patient, thus avoiding major complications.

**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

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**Denominator Criteria (Eligible Cases):**
All patients, regardless of age,
**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 one or more acute rib fractures (ICD-10-CM):**
S22.31XA, S22.31XB – Fracture of one rib, right side
S22.32XA, S22.32XB – Fracture of one rib, left side
S22.39XA, S22.39XB – Single rib fracture, unspecified side
S22.41XA, S22.41XB – Multiple fractures of ribs, right side
S22.42XA, S22.42XB – Multiple fractures of ribs, left side
S22.43XA, S22.43XB – Multiple fractures of ribs, bilateral
S22.49XA, S22.49XB – Multiple fractures of rib, unspecified side
S22.5XXA, S22.5XXB – Flail chest
**AND**
**POS Code:** 23 – Hospital Emergency Room

**Denominator Exclusion:** Healed/Healing rib fracture(s) **(DE024)**

**NUMERATOR:**
Final report contains documentation of ALL of the following:
1. Rib fracture numbering
2. Laterality of rib fracture(s)
3. Presence or absence of ribs fractured in two or more places

**Numerator Options:**
***Performance Met:***
**PM024:** Final report includes documentation of ALL of the following:
1. Rib fracture numbering
2. Laterality of rib fracture(s)
3. Presence or absence of ribs fractured in two or more places

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**OR**

***Performance Not Met:***

**PNM24:** Final report does not include documentation of ALL of the following, reason not specified:

1. Rib fracture numbering
2. Location of rib fracture(s)
3. Presence or absence of ribs fractured in two or more places

**OR**

***Denominator Exception:***

**PE024:** Documentation of patient reason(s) why final report does not include documentation of ALL the requirements listed above (such as, patient is in an urgent or emergent medical situation where time is of the essence and to delay treatment would jeopardize the patient's health status).

**RATIONALE:**

Often times rib fractures can lead to severe complications when patients are not adequately monitored. Presenting the required documentation elements listed in this measure to the Emergency provider allows them to make better informed treatment plans, thus avoiding potentially fatal complications or unnecessary admissions.

The most common mechanism causing rib fractures is blunt trauma (i.e. automobile accidents, falls from height, assault, or even severe coughing). Approximately 10% of all patients admitted for blunt chest trauma have one or more rib fractures, with up to a third of the patients going on to develop secondary complication [4,5].

"In a retrospective study of 174 chest trauma patients with rib fracture, it was found that the number of displaced or total rib fractures, bilateral rib fractures, and rib fractures in more than two areas were associated with the most chest complications. Furthermore, three or more rib fractures or any displacement were found to be the most sensitive risk factor for chest complications…" [3].

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**GAP ANALYSIS:**

"Radiology reports are often not sufficiently descriptive or are incomplete with respect to the number and location fracture and reliance on these data will lead to erroneous conclusions." In a study of 388 patients with ≥ 1 rib fracture, the CT radiology reports of 43% (179 of 388) of the patients incorrectly identified the number and location of the fractured ribs. Of these reports, 72% (129 of 179) differed from the prospective review by more than one fracture [6].

**ECONOMIC ANALYSIS:**

Rib fractures affect between 22,000 and 45,000 people in the United States every year. Looking at rib fracture admissions during 2007–2016, (a study found that) the average cost per hospitalization was $10,169. The annual cost of rib fracture hospitalizations is now over $469 million per year and increasing over time [1].

Multiple rib fractures and flail chest rib fractures are associated with increased cost. Looking at rib fracture admissions during 2007–2016, multiple and flail chest rib fracture patients accounted for 64,411 (85%) and 1,234 (2%) admissions, respectively. More than 50% of the patients with multiple non-flail fractures had moderate to profound injuries, which resulted in 6% to 26% higher costs relative to the mild injuries.
The number of body regions injured is associated with increased cost. Looking at rib fracture admissions during 2007–2016, a higher proportion of isolated chest injuries occurred in single rib fracture patients (64%) compared to multiple (52%) and flail chest (30%) rib fracture patients. And compared to only chest injuries, 1–2 and 3–5 body region injuries resulted in 17% to 32% higher costs [1].

Longer hospitalizations are associated with increased cost. Looking at rib fracture admissions during 2007–2016, the average length of stay (LOS) for flail chest, multiple and single rib fracture patients was 8.2, 4.1 and 3.3 days, respectively. Cost of hospitalization was found to increase incrementally for each day increase in LOS by 10% [1].

Rib fracture hospitalizations are a large cost burden on the US healthcare system, with the largest total cost being attributable to the group of patients with multiple non-flail fractures. Documentation of rib fracture numbering, laterality of rib fracture(s), and the presence or absence of multi-segmental rib fractures in final radiology reports can

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reduce cost by facilitating early and more accurate identification of multiple non-flail rib fractures. And early identification can lead to expedited discharge which has been shown to result in significant cost savings [2].

**References:**

1. Sarode AL, Ho VP, Pieracci FM, Moorman ML, Towe CW. The financial burden of rib fractures: National estimates 2007 to 2016. Injury. 2021 Aug;52(8):2180-2187. doi: http://doi.org/10.1016/j.injury.2021.05.027.
2. Dalton MK, Minarich MJ, Twaddell KJ, Hazelton JP, Fox NM. The expedited discharge of patients with multiple traumatic rib fractures is cost-effective. Injury. 2019 Jan;50(1):109-112. doi: http://doi.org/10.1016/j.injury.2018.10.014.
3. Chien CY, Chen YH, Han ST, Blaney GN, Huang TS, Chen KF. The number of displaced rib fractures is more predictive for complications in chest trauma patients. Scand J Trauma Resusc Emerg Med. 2017 Feb 28;25(1):19. doi: http://doi.org/10.1186/s13049-017-0368-y.
4. Pines G, Gotler Y, Lazar LO, Lin G. Clinical significance of rib fractures' anatomical patterns. Injury. 2020 Aug;51(8):1812-1816. doi: http://doi.org/10.1016/j.injury.2020.05.023.
5. Serfin JA, Guo WA. Rib fractures. The American Association for the Surgery of Trauma. https://www.aast.org/resources-detail/rib-fractures.
6. Livingston DH, Shogan B, John P, Lavery RF. CT diagnosis of Rib fractures and the prediction of acute respiratory failure. J Trauma. 2008 Apr;64(4):905-11. doi: http://doi.org/10.1097/TA.0b013e3181668ad7.

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

**SAMPLE CALCULATIONS:**

**Data Completeness =**

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

**Performance Rate =**

$$\frac{\text{Performance Met (a=40 procedures)}}{\text{Data Completeness Numerator (100 procedures) - Denominator Exception (20 procedures)}} = \frac{40 \text{ procedures}}{80 \text{ procedures}} = 50.00\%$$

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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**

**2025 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

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1) 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 when 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:**

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. The quality-data codes listed do not need to be submitted.

**DENOMINATOR:**

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

***DENOMINATOR NOTE:*** **Signifies that this CPT 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*

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**Denominator Exclusion:** 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 Definition**: 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 Definition**: 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:*

| Impression | Recommendation |
|---|---|
| < 2.6 cm | No follow up necessary |

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| | |
|---|---|
| 2.6-2.9 cm | US follow up every 5 years |
| 3.0 cm to 3.4 cm | US follow up every 3 years |
| 3.5 cm to 3.9 cm | US follow up every 12 months |
| 4.0 cm to 4.9 cm | US follow up every 12 months, vascular surgery consult |
| 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 Society for Vascular Surgery Guidelines: J Vasc Surgery 2009 Oct 50: s2-s49; updated Jan 2018 J Vasc Surgery 67:2-77

**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

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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.

**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

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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

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

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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 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.

| Impression | Recommendation |
|---|---|

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| | |
|---|---|
| < 2.6 cm | No follow up necessary |
| 2.6-2.9 cm | US follow up every 5 years |
| 3.0 cm to 3.4 cm | US follow up every 3 years |
| 3.5 cm to 3.9 cm | US follow up every 12 months |
| 4.0 cm to 4.9 cm | US follow up every 12 months, vascular surgery consult |
| 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 Society for Vascular Surgery Guidelines: J Vasc Surgery 2009 Oct 50: s2-s49; updated Jan 2018 J Vasc Surgery 67:2-77

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**:

1. Radiology Partners. Improving follow-up of abdominal aortic aneurysms by implementation of a radiology-driven care coordination program. ACR Annual Meeting. 2017.
2. Ahmed S, Mitsky J, Rawal U, Sheth S, Bronner J. Asymptomatic Abdominal Aortic Aneurysm: Standardizing Reporting Recommendations at a Large Multistate Radiology Practice. J Am Coll Radiol. 2021 Sep;18(9):1317-1323. doi: https://doi.org/10.1016/j.jacr.2021.04.009.

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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

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**MIPS Reporting Option:** Traditional MIPS
**Risk adjustment:** No
**NQF Number:** Not applicable
**eCQM Number:** Not applicable

**SAMPLE CALCULATIONS:**

**Data Completeness =**

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

**Performance Rate =**

$$\frac{\text{Performance Met (a=40 procedures)}}{\text{Data Completeness Numerator (100 procedures) - Denominator Exception (20 procedures)}} = \frac{40 \text{ procedures}}{80 \text{ procedures}} = 50.00\%$$

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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**

**2025 COLLECTION TYPE:**
QUALIFIED CLINICAL DATA REGISTRY QUALITY MEASURE (QCDR)

**MEASURE TYPE:**
Process – High Priority: Appropriate Use

**DESCRIPTION:**
Percentage of final reports for computed tomography (CT), computed tomography angiography (CTA), magnetic resonance imaging (MRI), or magnetic resonance angiography (MRA) of the abdomen or abdomen/pelvis for patients 18 years of age and older with a pancreatic cyst incidentally noted that include documentation of cyst classification 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 (CT) or magnetic resonance imaging/angiography (MRI/MRA) of the abdomen or abdomen/pelvis 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.

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**DENOMINATOR:**
All final reports for computed tomography/angiography (CT/CTA) and magnetic resonance imaging/angiography (MRI/MRA) of the abdomen or abdomen/pelvis 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: None**

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

****Numerator Note:***
- *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 Options:**
***Performance Met:***

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

**OR**

***Performance Not Met:***

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

**OR**

***Denominator Exception:***

**PE027:** Documentation of medical reason(s) for not including documentation of cyst classification 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].

**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

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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].

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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:** Appropriate Use
**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:** Traditional MIPS
**Risk adjustment:** No
**NQF Number:** Not applicable
**eCQM Number:** Not applicable

**SAMPLE CALCULATIONS:**

**Data Completeness =**

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

**Performance Rate =**

$$\frac{\text{Performance Met (a=40 procedures)}}{\text{Data Completeness Numerator (100 procedures) - Denominator Exception (20 procedures)}} = \frac{40 \text{ procedures}}{80 \text{ procedures}} = 50.00\%$$

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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**

**2025 COLLECTION TYPE:**
QUALIFIED CLINICAL DATA REGISTRY QUALITY MEASURE (QCDR)

**MEASURE TYPE:**
Process – High Priority

**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 female patients, 40 years of age and older at time of service,
**AND**

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**Patient procedure during the performance period (CPT):** 77067
**AND**
**Screening mammogram for malignant neoplasm of the breast (ICD-10-CM):** Z12.31

**Denominator Exclusion:** 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.

***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**

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***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].

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

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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 ANALYSES:**

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 "Continuous Variable Measure"
**Ratio Measure Scoring:** No
**MIPS Reporting Option:** Traditional MIPS
**Risk adjustment:** No
**NQF Number:** Not applicable
**eCQM Number:** Not applicable

**SAMPLE CALCULATIONS:**

**Data Completeness =**

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

**Performance Rate =**

$$\frac{\text{Performance Met (a=40 procedures)}}{\text{Data Completeness Numerator (100 procedures) - Denominator Exception (20 procedures)}} = \frac{40 \text{ procedures}}{80 \text{ procedures}} = 50.00\%$$