Quality ID #364: Optimizing Patient Exposure to Ionizing Radiation: Appropriateness: Follow-up CT Imaging for Incidentally Detected Pulmonary Nodules According to Recommended Guidelines
– National Quality Strategy Domain: Communication And Care Coordination
– Meaningful Measure Area: Transfer of Health Information and Interoperability

2020 COLLECTION TYPE:
MIPS CLINICAL QUALITY MEASURES (CQMS)

MEASURE TYPE:
Process – High Priority

DESCRIPTION:
Percentage of final reports for CT imaging studies with a finding of an incidental pulmonary nodule for patients aged 35 years and older that contain an impression or conclusion that includes a recommended interval and modality for follow-up (e.g., type of imaging or biopsy) or for no follow-up, and source of recommendations (e.g., guidelines such as Fleischner Society, American Lung Association, American College of Chest Physicians)

INSTRUCTIONS:
This measure is to be submitted **each time** a procedure for a CT imaging with an incidental pulmonary nodule is performed during the performance period. There is no diagnosis associated with this measure. This measure may be submitted by Merit-based Incentive Payment System (MIPS) eligible clinicians who perform the quality actions described in the measure based on the services provided and the measure-specific denominator coding.

Measure Submission Type:
Measure data may be submitted by individual MIPS eligible clinicians, groups, or third party intermediaries. 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 by MIPS eligible clinicians, groups, or third party intermediaries that utilize this modality for submissions; however, these codes may be submitted for those third party intermediaries that utilize Medicare Part B claims data. For more information regarding Application Programming Interface (API), please refer to the Quality Payment Program (QPP) website.

DENOMINATOR:
All final reports for CT imaging studies with a finding of an incidental pulmonary nodule for patients aged 35 years and older

Definition:
Heavy Tobacco Smokers - Patients who are heavy tobacco smokers includes patients with a 30 pack-year tobacco smoking history and currently smoke tobacco or have quit within the past 15 years. This definition is consistent with the USPSTF recommendation for lung cancer screening.

DENOMINATOR NOTE: *CT imaging studies include all studies in which all or part of the thorax can be seen.*

Denominator Criteria (Eligible Cases):
All patients age 35 years and older
AND
Patient procedure during the performance period (CPT): 70490, 70491, 70492, 75571, 75572, 75573, 75574, 70498, 71250, 71260, 71270, 71275, 72125, 72126, 72127, 72128, 72129, 72130 74150, 74160, 74170, 74174, 74175, 74176, 74177, 74178
AND
A finding of an incidental pulmonary nodule: G9754
AND NOT

DENOMINATOR EXCLUSIONS:

Patients with an active diagnosis or history of cancer (except basal cell and squamous cell skin carcinoma), patients who are heavy tobacco smokers, lung cancer screening patients: M1018

NUMERATOR:

Final reports that contain an impression or conclusion that includes a recommended interval and modality for follow-up (e.g., type of imaging or biopsy) or for no follow-up, and source of recommendations (e.g., guidelines such as Fleischner Society, American Lung Association, American College of Chest Physicians)

Definition:

Follow-up Recommendations - No follow-up recommended in the final CT report OR follow-up is recommended within a designated time frame in the final CT report. Recommendations noted in the final CT report should be in accordance with recommended guidelines.

Numerator Options:

Performance Met:	Follow-up recommendations documented according to recommended guidelines for incidentally detected pulmonary nodules (e.g., follow-up CT imaging studies needed or that no follow-up is needed) based at a minimum on nodule size AND patient risk factors **(G9345)**
OR	
Denominator Exception:	Documentation of medical reason(s) for not including a recommended interval and modality for follow-up or for no follow-up, and source of recommendations (e.g., patients with unexplained fever, immunocompromised patients who are at risk for infection) **(G9755)**
OR	
Performance Not Met:	Follow-up recommendations not documented according to recommended guidelines for incidentally detected pulmonary nodules, reason not given **(G9347)**

RATIONALE:

With the increasing use of chest computed tomography (CT) imaging comes an increase in the frequency of incidental pulmonary nodule findings. (MacMahon et al., 2017)

A recent study found that between 2006 and 2012, the annual rate of pulmonary nodule identification in a large, integrated health system increased from 3.9 to 6.6 per 1,000 person-years. The authors estimated that more than 1.5 million adult Americans will have a pulmonary nodule identified each year. (MacMahon et al., 2017)

These incidental findings require appropriate management to avoid subjecting patients to unnecessary follow-up scans or conversely missing early malignancies. A number of factors contribute to appropriate management decisions for pulmonary nodules, based on estimations of the individual risk of malignancy including nodule size and morphology as well as clinical risk factors. (MacMahon et al., 2017)

Despite evidence-based recommendations from groups such as the Fleishner society regarding the management and follow-up of small pulmonary nodules detected incidentally, various studies have documented low rates of adherence. For example, one recent study found that 44.7% of patients received care inconsistent with the Fleischner society recommendations (17.8% overevaluation, 26.9% underevaluation). (MacMahon et al., 2017) This measure aims to encourage the use of an evidence-based approach in recommending follow up imaging for incidental pulmonary nodules.

CLINICAL RECOMMENDATION STATEMENTS:

2019 Addition to Supporting Guidelines: Lung nodules are commonly encountered in the portions of the lungs that are included on CT scans of the neck, heart, and abdomen, and the question often arises as to whether a complete thoracic CT examination should be performed in such instances.

For most small nodules (<6 mm), we do not recommend any further investigation on the basis of the estimated low risk of malignancy.

For intermediate-size (6–8-mm) nodules, we recommend follow-up CT of the complete chest after an appropriate interval (3–12 months depending on clinical risk) to confirm stability and to evaluate additional findings. If nodule stability can be demonstrated on the basis of retrospective comparison with a previous study, that may suffice.

In the case of a large or very suspicious nodule, we recommend proceeding with a complete thoracic CT examination for further evaluation. (MacMahon et al., 2017)

Technical update to 2018 specifications: The following evidence statements are quoted verbatim from the referenced clinical guidelines and other sources:

Recommendation 1: single solid noncalcified nodules. —Solid nodules smaller than 6 mm (those 5 mm or smaller) do not require routine follow-up in patients at low risk (grade 1C; strong recommendation, low- or very-low-quality evidence). (MacMahon et al., 2017)

Solid nodules smaller than 6 mm do not require routine follow-up in all patients with high clinical risk; however, some nodules smaller than 6 mm with suspicious morphology, upper lobe location, or both may warrant follow-up at 12 months (grade 2A; weak recommendation, high-quality evidence). (MacMahon et al., 2017)

Solitary noncalcified solid nodules measuring 6–8 mm in patients with low clinical risk are recommended to undergo initial follow-up at 6–12 months depending on size, morphology, and patient preference *(*grade 1C: strong recommendation, low- or very-low-quality evidence). (MacMahon et al., 2017)

For solitary solid noncalcified nodules measuring 6–8 mm in patients at high risk, an initial follow-up examination is recommended at 6–12 months and again at 18–24 months (grade 1B: strong recommendation, moderate quality evidence). (MacMahon et al., 2017)

For solitary solid noncalcified nodules larger than 8 mm in diameter, consider 3-month follow-up, work-up with combined positron emission tomography (PET) and CT (PET/CT), tissue sampling, or a combination thereof; any one of these options may be appropriate depending on size, morphology, comorbidity, and other factors. (grade 1A; strong recommendation, high-quality evidence). (MacMahon et al., 2017)

Recommendation 2: multiple solid noncalcified nodules. —For multiple solid noncalcified nodules smaller than 6 mm in diameter, no routine follow-up is recommended (grade 2B; weak recommendation, moderate-quality evidence). (MacMahon et al., 2017)

For multiple solid noncalcified nodules with at least one nodule 6 mm or larger in diameter, follow-up is recommended at approximately 3–6 months, followed by an optional second scan at 18–24 months that will depend on estimated risk. (grade 1B; strong recommendation, moderate-quality evidence). (MacMahon et al., 2017)

Recommendation 3: solitary pure ground-glass nodules. —For pure ground-glass nodules smaller than 6 mm (i.e., 5 mm and smaller) in diameter, no routine follow-up is recommended (grade 1B; strong recommendation, moderate-quality evidence). (MacMahon et al., 2017)

For pure ground-glass nodules 6 mm or larger, follow-up scanning is recommended at 6–12 months and then every 2 years thereafter until 5 years (grade 1B; strong recommendation, moderate-quality evidence). (MacMahon et al., 2017)

Recommendation 4: solitary part solid lung nodules. —For solitary part solid nodules smaller than 6 mm, no routine follow-up is recommended (grade 1C; strong recommendation, low- or very-low-quality evidence). (MacMahon et al., 2017)

For solitary part-solid nodules with a solid component 6 mm or larger, a short-term follow-up CT scan at 3–6 months should be considered to evaluate for persistence of the nodule. For nodules with particularly suspicious morphology (i.e., lobulated margins or cystic components), a growing solid component, or a solid component larger than 8 mm, PET/CT, biopsy, or resection are recommended (grade 1B; strong recommendation, moderate quality evidence.) (MacMahon et al., 2017)

Recommendation 5: multiple subsolid lung nodules. —In patients with multiple subsolid nodules smaller than 6 mm, one must consider infectious causes. If lesions remain persistent after an initial follow-up scan at 3–6 months, consider follow-up at approximately 2 and 4 years to confirm stability, depending on the clinical setting (grade 1C; strong recommendation, low- or very-low-quality evidence). (MacMahon et al., 2017)

References:

MacMahon H, Naidich DP, Goo JM, et al. Guidelines for Management of Incidental Pulmonary Nodules Detected on CT Images: From the Fleischner Society 2017. Radiology. 2017 Feb 23:161659.

Gould MK, Tang T, Liu IL, et al. Recent trends in the identification of incidental pulmonary nodules. Am J Respir Crit Care Med 2015;192(10):1208–1214.

Eisenberg RL, Bankier AA, Boiselle PM. Compliance with Fleischner Society Guidelines for Management of Small Lung Nodules: A Survey of 834 Radiologists. Radiology 2010; 255:1, 218-224

Esmaili A, Munden RF, Mohammed TH. Small Pulmonary Nodule Management: A Survey of the Members of the Society of Thoracic Radiology With Comparison to the Fleischner Society Guidelines. J Thorac Imaging. 2011 Feb;26(1):27-31.

Lacson R, Prevedello LM, Andriole KP, et al. Factors associated with radiologists' adherence to Fleischner Society guidelines for management of pulmonary nodules. J Am Coll Radiol. 2012 Jul;9(7):468-73.

Wiener RS, Gould MK, Slatore CG, Fincke BG, Schwartz LM, Woloshin S. Resource Use and Guideline Concordance in Evaluation of Pulmonary Nodules for Cancer: Too Much and Too Little Care. JAMA Intern Med. 2014;174(6):871-880.

Board of Medical Specialties (ABMS) and the American College of Radiology (ACR). Neither the AMA, ABMS, ACR, PCPI, nor its members shall be responsible for any use of the Measures.

The AMA's, PCPI's and ABMS's significant past efforts and contributions to the development and updating of the Measures is acknowledged. ACR is solely responsible for the review and enhancement ("Maintenance") of the Measures as of December 31, 2014.

ACR encourages use of the Measures by other health care professionals, where appropriate.

THE MEASURES AND SPECIFICATIONS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND.

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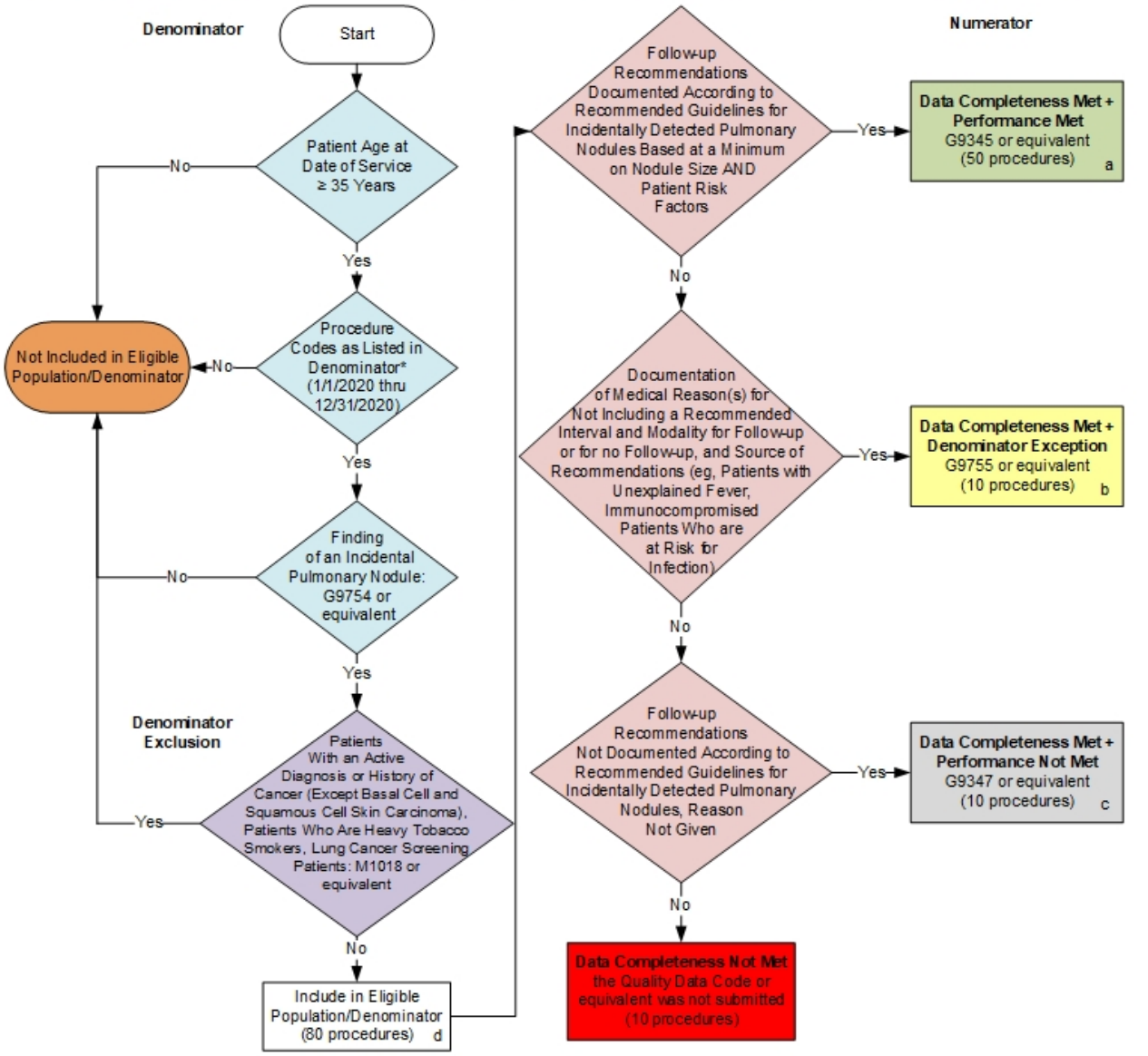
2020 Clinical Quality Measure Flow for Quality ID #364: Optimizing Patient Exposure to Ionizing Radiation: Appropriateness: Follow-up CT Imaging for Incidentally Detected Pulmonary Nodules According to Recommended Guidelines

Disclaimer: *Refer to the measure specification for specific coding and instructions to submit this measure.*



SAMPLE CALCULATIONS:

Data Completeness=
Performance Met (a=50 procedures) + Denominator Exception (b=10 procedures) + Performance Not Met (c=10 procedures) = 70 procedures = **87.50%**
Eligible Population / Denominator (d=80 procedures) = 80 procedures

Performance Rate=
Performance Met (a=50 procedures) = 50 procedures = **83.33%**
Data Completeness Numerator (70 procedures) - Denominator Exception (10 procedures) = 60 procedures

* See the posted measure specification for specific coding and instructions to submit this measure.
NOTE : Submission Frequency: Procedure

v4

2019 Clinical Quality Measure Flow Narrative for Quality ID #364: Optimizing Patient Exposure to Ionizing Radiation: Appropriateness: Follow-up CT Imaging for Incidentally Detected Pulmonary Nodules According to Recommended Guidelines

Disclaimer: *Refer to the measure specification for specific coding and instructions to submit this measure.*

1. Start with Denominator
2. Check Patient Age:
    a. If Patient Age at Date of Service is greater than or equal to 35 Years equals No, do not include in Eligible Population. Stop Processing
    b. If Patient Age at Date of Service is greater than or equal to 35 Years equals Yes, proceed to check Procedure Performed.
3. Check Procedure Performed:
    a. If Procedure as Listed in the Denominator equals No, do not include in Eligible Population. Stop Processing.
    b. If Procedure as Listed in the Denominator equals Yes, proceed to check Finding of an Incidental Pulmonary Nodule.
4. Check Finding of an Incidental Pulmonary Nodule:
    a. If Finding of an Incidental Pulmonary Nodule equals No, do not include in Eligible Population. Stop Processing.
    b. If Finding of an Incidental Pulmonary Nodule equals Yes, proceed to check Patients with an Active Diagnosis or History of Cancer (Except Basal Cell and Squamous Cell Skin Carcinoma), Patients Who Are Heavy Tobacco Smokers, Lung Cancer Screening Patients.
5. Check Patients with an Active Diagnosis or History of Cancer (Except Basal Cell and Squamous Cell Skin Carcinoma), Patients Who Are Heavy Tobacco Smokers, Lung Cancer Screening Patients:
    a. If Patients with an Active Diagnosis or History of Cancer (Except Basal Cell and Squamous Cell Skin Carcinoma), Patients Who Are Heavy Tobacco Smokers, Lung Cancer Screening Patients equals No, include in Eligible Population.
    b. If Patients with an Active Diagnosis or History of Cancer (Except Basal Cell and Squamous Cell Skin Carcinoma), Patients Who Are Heavy Tobacco Smokers, Lung Cancer Screening Patients equals Yes, do not include in Eligible Population. Stop Processing.
6. Denominator Population:
    a. Denominator Population is all Eligible Procedures in the Denominator. Denominator is represented as Denominator in the Sample Calculation listed at the end of this document. Letter d equals 80 procedures in the Sample Calculation.
7. Start Numerator

8. Check Follow-up Recommendations Documented According to Recommended Guidelines for Incidentally Detected Pulmonary Nodules Based at a Minimum on Nodule Size AND Patient Risk Factors:

    a. If Follow-up Recommendations Documented According to Recommended Guidelines for Incidentally Detected Pulmonary Nodules Based at a Minimum on Nodule Size AND Patient Risk Factors equals Yes, include in Data Completeness Met and Performance Met.

    b. Data Completeness Met and Performance Met letter is represented in the Data Completeness and Performance Rate in the Sample Calculation listed at the end of this document. Letter a equals 50 procedures in the Sample Calculation.

    c. If Follow-up Recommendations Documented According to Recommended Guidelines for Incidentally Detected Pulmonary Nodules Based at a Minimum on Nodule Size AND Patient Risk Factors equals No, proceed to check Documentation of Medical Reason(s) for not Including a Recommended Interval and Modality for Follow-up or for no Follow-up, and Source of Recommendations (e.g., Patients with Unexplained Fever, Immunocompromised Patients Who are at Risk for Infection).

9. Check Documentation of Medical Reason(s) for not Including a Recommended Interval and Modality for Follow-up or for no Follow-up, and Source of Recommendations (e.g., Patients with Unexplained Fever, Immunocompromised Patients Who are at Risk for Infection):

    a. If Documentation of Medical Reason(s) for not Including a Recommended Interval and Modality for Follow-up or for no Follow-up, and Source of Recommendations (e.g., Patients with Unexplained Fever, Immunocompromised Patients Who are at Risk for Infection) equals Yes, include in Data Completeness and Denominator Exception.

    b. Data Completeness Met and Denominator Exception letter is represented in the Data Completeness and Performance Rate in the Sample Calculation listed at the end of this document. Letter b equals 10 procedures in the Sample Calculation.

    c. If Documentation of Medical Reason(s) for not Including a Recommended Interval and Modality for Follow-up or for no Follow-up, and Source of Recommendations (e.g., Patients with Unexplained Fever, Immunocompromised Patients Who are at Risk for Infection) equals No, proceed to check Follow-up Recommendations Not Documented According to Recommended Guidelines for Incidentally Detected Pulmonary Nodules, Reason Not Given.

10. Check Follow-up Recommendations Not Documented According to Recommended Guidelines for Incidentally Detected Pulmonary Nodules, Reason Not Given:

    a. If Follow-up Recommendations Not Documented According to Recommended Guidelines for Incidentally Detected Pulmonary Nodules, Reason Not Given equals Yes, include in Data Completeness Met and Performance Not Met.

    b. Data Completeness Met and Performance Not Met letter is represented in the Data Completeness in the Sample Calculation listed at the end of this document. Letter c equals 10 procedures in the Sample Calculation.

    c. If Follow-up Recommendations Not Documented According to Recommended Guidelines for Incidentally Detected Pulmonary Nodules, Reason Not Given equals No, proceed to check Data Completeness Not Met.

11. Check Data Completeness Not Met:

a. If Data Completeness Not Met, the Quality Data Code or equivalent was not submitted. 10 procedures have been subtracted from the Data Completeness Numerator in the Sample Calculation.

SAMPLE CALCULATIONS:

Data Completeness=

Performance Met (a=50 procedures) + Denominator Exception (b=10 procedures) + Performance Not Met (c=10 procedures) / Eligible Population / Denominator (d=80 procedures) = 70 procedures / 80 procedures = **87.50%**

Performance Rate=

Performance Met (a=50 procedures) / Data Completeness Numerator (70 procedures) - Denominator Exception (10 procedures) = 50 procedures / 60 procedures = **83.33%**