

Closing the Results Loop Draft Measure Specifications

(Last updated January 6, 2022)

Measure 1: Closing the loop on completion of follow-up recommendations for actionable incidental findings

Measure Purpose	This measure aims to increase the number of patients with actionable incidental imaging findings receiving radiologist-recommended follow-up. Completion of recommended follow-up can lead to earlier detection of neoplasms or other non-neoplastic treatable conditions.
Measure Type	Outcome
Measure Level	Individual and Group Level
Measure Rationale	<p>Radiologist recommendations for follow-up imaging of actionable incidentally detected imaging results are present in up to 10 percent of final radiology reports.^{i, ii, iii, iv} These incidental findings may represent early malignancy or other treatable conditions.</p> <p>Follow-up imaging is likely to confirm or characterize clinically significant findings. Current compliance for recommended follow-up ranges from 29 to 77 percent.^{v, vi, vii} This presents an opportunity for improving patient outcomes through early detection of cancer or other treatable conditions and ensuing treatment as appropriate.</p> <p>Early detection of cancer or pre-malignant lesions can reduce cancer deaths because, at early stages, cancer may be curable. Even though established cancer screening programs such as breast, colorectal, cervix, prostate, and lung cancer screening are effective, detecting cancer as an incidental finding on cross-sectional imaging is increasing due to technological advancements resulting in higher image resolution.^{viii}</p> <p>Further, detection and subsequent treatment of pre-malignant lesions and early cancer can improve quality of life-related outcomes and survival rates for patients with cancer, thereby reducing the national cancer death rate. Detection of cancers at an earlier stage is also associated with reduced overall treatment costs.^{ix}</p>
Measure Description	Percentage of patients with at least one actionable incidental finding ¹ who received follow-up imaging within the recommended time interval.
Denominator	All patients with actionable incidental findings ¹ .
Numerator	Patients who received follow-up imaging within a 90-day period beginning 30 days before and ending 60 days after the time interval recommended for follow-up.
Denominator Exceptions	<p>Patients may be excluded from the measure when there is documentation that the follow-up was not completed within the recommended time interval, for reasons such as:</p> <p>Medical reasons:</p> <ul style="list-style-type: none">Care no longer needed because of patient's health status (e.g., palliative care, patient deceased, stable finding by comparison to prior imaging, alternative evidence-based guidance²)

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	<p>Patient reasons:</p> <ul style="list-style-type: none">• Shared decision-making results in the patient declining the recommendation (e.g., patient risk tolerance, patient preference regarding over-diagnosis, expected diagnostic yield, unable to pay for exam)• Medical condition prevents patient from appearing for the follow-up imaging appointment
Definitions	<p>¹ An actionable incidental finding is a mass or lesion detected on cross-sectional imaging* of the head, neck, chest, abdomen, or pelvis not related to the reason for imaging that represents a finding for which non-emergent follow-up is recommended.</p> <p>*Cross-sectional imaging refers to CT, MRI, PET, and SPECT and related imaging techniques, that view the body in cross-section [e.g.,] as axial (cross-sectional) slices. (Bell, DJ, et al. Cross-sectional imaging. https://radiopaedia.org/articles/cross-sectional-imaging-1?lang=us. Last accessed on October 12, 2020.)</p> <p>² Alternative evidence-based guidance refers to differing interpretations of clinical necessity for follow-up. This permits the clinician managing the patient’s care to decide to opt-out of the radiologist-recommended follow-up imaging.</p>
Guidance	<p>In the rare case of multiple incidental findings, the follow-up of at least one incidental finding is sufficient to satisfy the metric. This does not preclude the importance of tracking each actionable incidental finding with follow-up recommendations.</p>

ⁱ <https://www.ncbi.nlm.nih.gov/pubmed/23548405>

ⁱⁱ <https://www.ncbi.nlm.nih.gov/pubmed/26842832>

ⁱⁱⁱ <https://www.ncbi.nlm.nih.gov/pubmed/18442766>

^{iv} <https://www.ncbi.nlm.nih.gov/pubmed/19717755>

^v <https://www.ncbi.nlm.nih.gov/pubmed/29119408>

^{vi} <https://www.ncbi.nlm.nih.gov/pubmed/26846530>

^{vii} <https://www.ncbi.nlm.nih.gov/pubmed/24370128>

^{viii} <https://www.ncbi.nlm.nih.gov/pubmed/29610964>

^{ix} https://res.mdpi.com/data/data-02-00030/article_deploy/data-02-00030-v2.pdf

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Measure 2: Closing the loop on completion of follow-up recommendations for actionable incidental findings of abdominal aortic aneurysm (AAA)

Measure Purpose	This measure aims to increase the number of patients with actionable incidental aortic aneurysm (AAA) imaging findings ¹ receiving radiologist-recommended follow-up. Completion of recommended follow-up can lead to earlier detection of AAA.
Measure Type	Outcome
Measurement Level	Individual and Group Level
Measure Rationale	<p>Radiologist recommendations for follow-up imaging of actionable incidentally detected imaging results are present in up to 10 percent of final radiology reports.^{i, ii, iii, iv} These incidental findings may represent early malignancy or other treatable conditions.</p> <p>Follow-up imaging is likely to confirm or characterize clinically significant findings. Current compliance for recommended follow-up ranges from 29 to 77 percent.^{v, vi, vii} This presents an opportunity for improving patient outcomes through the early detection of abdominal aortic aneurysm (AAA) and ensuing treatment as appropriate.</p> <p>Early detection of AAA presents opportunities to prevent an adverse health outcome, like rupture, associated with high levels of morbidity and mortality. Early detection of AAA is also associated with reduced overall treatment costs.^{viii}</p>
Measure Description	Percentage of patients, aged 18 years and older, with a 4.0 to 4.9 cm AAA actionable incidental finding ¹ who received follow-up imaging within the recommended time interval.
Denominator	All patients, aged 18 years and older, with a 4.0 to 4.9 cm AAA actionable incidental finding ¹ .
Numerator	Patients who received follow-up imaging within a 90-day period beginning 30 days before and ending 60 days after the time interval recommended for follow-up.
Denominator Exceptions	<p>Patients may be excluded from the measure when there is documentation that the follow-up was not completed within the recommended time interval, for reasons such as:</p> <p>Medical reasons:</p> <ul style="list-style-type: none">Care no longer needed because of patient's health status (e.g., palliative care, patient deceased, stable finding by comparison to prior imaging, alternative evidence-based guidance) <p>Patient reasons:</p>

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	<ul style="list-style-type: none">• Shared decision-making results in the patient declining the recommendation (e.g., patient risk tolerance, patient preference regarding over-diagnosis, expected diagnostic yield, unable to pay for exam)• Medical condition prevents patient from appearing for the follow-up imaging appointment
Definitions	<p>¹ An actionable incidental finding is a mass or lesion detected on cross-sectional imaging* of the head, neck, chest, abdomen, or pelvis not related to the reason for imaging that represents a finding for which non-emergent follow-up is recommended.</p> <p>*Cross-sectional imaging refers to CT, MRI, PET, and SPECT and related imaging techniques, that view the body in cross-section i.e. as axial (cross-sectional) slices. (Bell, DJ, et al. Cross-sectional imaging. https://radiopaedia.org/articles/cross-sectional-imaging-1?lang=us. Last accessed on October 12, 2020.)</p>
Guidance	<p>From the Society for Vascular Surgery Practice Guidelines on the Care of Patients with an Abdominal Aortic Aneurysm (J Vasc Surg. 2018 Jan;67(1):2-77.e2. doi: 10.1016/j.jvs.2017.10.044.)</p> <p>Integrating cost-effectiveness data, recommendations for surveillance intervals were based on aortic size. A one-year interval was recommended for AAAs between 4.0 and 4.9.</p>

ⁱ <https://www.ncbi.nlm.nih.gov/pubmed/23548405>

ⁱⁱ <https://www.ncbi.nlm.nih.gov/pubmed/26842832>

ⁱⁱⁱ <https://www.ncbi.nlm.nih.gov/pubmed/18442766>

^{iv} <https://www.ncbi.nlm.nih.gov/pubmed/19717755>

^v <https://www.ncbi.nlm.nih.gov/pubmed/29119408>

^{vi} <https://www.ncbi.nlm.nih.gov/pubmed/26846530>

^{vii} <https://www.ncbi.nlm.nih.gov/pubmed/24370128>

^{viii} <https://www.sciencedirect.com/science/article/pii/S0741521410006865?via%3Dihub>

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Measure 3: Closing the loop on completion of follow-up recommendations for actionable incidental findings of pulmonary nodules

Measure Purpose	This measure aims to increase the number of patients with actionable incidental pulmonary nodule imaging findings receiving radiologist-recommended follow-up. Completion of recommended follow-up can lead to earlier detection of pulmonary nodules.
Measure Type	Outcome
Measure Level	Individual and Group Level
Measure Rationale	<p>Radiologist recommendations for follow-up imaging of actionable incidentally detected imaging results are present in up to 10 percent of final radiology reports. i, ii, iii, iv These incidental findings may represent early malignancy or other treatable conditions.</p> <p>Follow-up imaging is likely to confirm or characterize clinically significant findings. Current compliance for recommended follow-up ranges from 29 to 77 percent. v, vi, vii This presents an opportunity for improving patient outcomes through the early detection of neoplastic and other treatable lung diseases.</p> <p>Incidental pulmonary nodules are an increasingly common result of routine radiology care, occurring more often than initially thought. However, more frequent nodule identification has not resulted in increases of diagnosis of cancerous nodules. viii Given the variability of adherence to radiologist follow-up recommendations, there is potential for the lack of follow-up imaging to reduce the rates of such cancer diagnoses.</p>
Measure Description	Percentage of patients, aged 35 years and older, with a single >6.0 mm pulmonary nodule actionable incidental finding ¹ who received follow-up imaging within the recommended time interval.
Denominator	All patients aged, aged 35 years and older, with a single >6.0 mm pulmonary nodule actionable incidental finding ¹ discovered on a CT exam.
Numerator	Patients who received follow-up CT imaging within a 90-day period beginning 30 days before and ending 60 days after the recommended time interval.
Denominator Exceptions	Patients may be excluded from the measure when there is documentation that the follow-up was not completed within the recommended time interval, for reasons such as: <u>Medical reasons:</u>

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	<ul style="list-style-type: none">Care no longer needed because of patient’s health status (e.g., palliative care, patient deceased, stable finding by comparison to prior imaging, alternative evidence-based guidance) <p>Patient reasons:</p> <ul style="list-style-type: none">Shared decision-making results in the patient declining the recommendation (e.g., patient risk tolerance, patient preference regarding over-diagnosis, expected diagnostic yield, unable to pay for exam)Medical condition prevents patient from appearing for the follow-up imaging appointment
Definitions	<p>¹An actionable incidental finding is a mass or lesion detected on cross-sectional imaging* of the head, neck, chest, abdomen, or pelvis not related to the reason for imaging that represents a finding for which non-emergent follow-up is recommended.</p> <p>*Cross-sectional imaging refers to CT, MRI, PET, and SPECT and related imaging techniques, that view the body in cross-section i.e. as axial (cross-sectional) slices. (Bell, DJ, et al. Cross-sectional imaging. https://radiopaedia.org/articles/cross-sectional-imaging-1?lang=us. Last accessed on October 12, 2020.)</p>
Guidance	<p>Guidelines for Management of Incidental Pulmonary Nodules Detected on CT Images: From the Fleischner Society 2017; MacMahon H et al Radiology. 2017 Jul;284(1):228-243. doi: 10.1148/radiol.2017161659. Epub 2017 Feb 23.</p> <p>https://pubmed.ncbi.nlm.nih.gov/28240562/</p>

ⁱ <https://www.ncbi.nlm.nih.gov/pubmed/23548405>

ⁱⁱ <https://www.ncbi.nlm.nih.gov/pubmed/26842832>

ⁱⁱⁱ <https://www.ncbi.nlm.nih.gov/pubmed/18442766>

^{iv} <https://www.ncbi.nlm.nih.gov/pubmed/19717755>

^v <https://www.ncbi.nlm.nih.gov/pubmed/29119408>

^{vi} <https://www.ncbi.nlm.nih.gov/pubmed/26846530>

^{vii} <https://www.ncbi.nlm.nih.gov/pubmed/24370128>

^{viii} <https://pubmed.ncbi.nlm.nih.gov/26214244/>

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Measure 4: Specificity of follow-up imaging recommendations for actionable incidental findings

Measure Purpose	This measure aims to ensure that radiologist recommendations for follow-up imaging of actionable incidental findings ¹ include the location of the finding, the modality, and time interval for follow-up imaging. Such specifics improve communication between radiologists and referring physicians and resulted in higher adherence rates with follow-up recommendations.
Measure Type	Process
Measure Level	Individual and Group Level
Measure Rationale	Low adherence to radiology follow-up recommendations may be due in part by ineffective communication to the responsible provider and cause low priority for providers taking care of critically ill patients. ⁱ Including distinct data elements within the radiology report (e.g., specificity of lesion/mass location, recommended imaging modality for follow up, and time interval for follow-up imaging) would support effective communication regarding the radiologist-recommended follow-up imaging. ^{ii, iii, iv}
Measure Description	Percentage of all final reports containing actionable incidental findings ¹ with recommendations for follow-up imaging that include all following elements within the impression or conclusion section: <ul style="list-style-type: none">• Location of lesion• At least one specific recommended follow-up modality, AND• Time interval or range for follow-up imaging.
Denominator	All patients with actionable incidental findings.
Numerator	Actionable incidental findings with recommendations for follow-up imaging that include all following elements within the impression or conclusion section: <ul style="list-style-type: none">• Location of lesion² (organ, position with organ e.g. lobe, laterality for paired organs)• At least one specific recommended follow-up modality, AND• Time interval or range for follow-up imaging
Denominator Exceptions	None

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Definitions	<p>¹An actionable incidental finding is a mass or lesion detected on cross-sectional imaging* of the head, neck, chest, abdomen, or pelvis not related to the reason for imaging that represents a finding for which non-emergent follow-up is recommended.</p> <p>*Cross-sectional imaging refers to CT, MRI, PET, and SPECT and related imaging techniques, that view the body in cross-section [e.g.,] as axial (cross-sectional) slices. (Bell, DJ, et al. Cross-sectional imaging. https://radiopaedia.org/articles/cross-sectional-imaging-1?lang=us. Last accessed on October 12, 2020.)</p> <p>²Lesion Location</p> <table border="1" data-bbox="548 661 1513 850"><thead><tr><th>Report Element</th><th>Options</th><th>Example</th></tr></thead><tbody><tr><td>Observation</td><td>Mass, cyst, lesion, abnormality</td><td>Neoplasm</td></tr><tr><td>Anatomic location</td><td>Organ, anatomical space</td><td>Kidney</td></tr><tr><td>Side</td><td>Right, left, median, mesial, central</td><td>Left</td></tr></tbody></table> <p>Reference: Adler B. The radiology report: a guide to thoughtful communication for radiologists and other medical professionals, by Curtis P. Langlotz.</p>	Report Element	Options	Example	Observation	Mass, cyst, lesion, abnormality	Neoplasm	Anatomic location	Organ, anatomical space	Kidney	Side	Right, left, median, mesial, central	Left
Report Element	Options	Example											
Observation	Mass, cyst, lesion, abnormality	Neoplasm											
Anatomic location	Organ, anatomical space	Kidney											
Side	Right, left, median, mesial, central	Left											
Guidance	<p>Note: If a report contains multiple actionable findings with follow-up recommendations, each actionable incidental finding should be documented.</p> <p>Harvey HB, Wu CC, Gilman MD, Vartanians V, Halpern EF, Pandharipande PV, Shepard JO, Alkasab TK. Correlation of the Strength of Recommendations for Additional Imaging to Adherence Rate and Diagnostic Yield. J Am Coll Radiol. 2015 Oct;12(10):1016-22. doi: 10.1016/j.jacr.2015.03.038. Epub 2015 Jun 17. PMID: 26092592.</p> <p>Mabotuwana T, Hall CS, Tieder J, Gunn ML. Improving Quality of Follow-Up Imaging Recommendations in Radiology. AMIA Annu Symp Proc. 2018 Apr 16;2017:1196-1204. PMID: 29854188; PMCID: PMC5977608.</p>												

ⁱ <https://www.ncbi.nlm.nih.gov/pubmed/27743142>

ⁱⁱ <http://www.ihl.org/resources/Pages/Publications/Closing-the-Loop-A-Guide-to-Safer-Ambulatory-Referrals.aspx>

ⁱⁱⁱ <https://www.atsjournals.org/doi/pdf/10.1513/AnnalsATS.201307-242BC>

^{iv} <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5977608/>

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Measure 5: Evidence documentation in follow-up imaging recommendations for actionable incidental findings

Measure Purpose	This measure aims to ensure that radiologist recommendations for follow-up imaging of actionable incidental findings ¹ include the source of evidence supporting the recommendations. Such specifics improve communication between radiologists and referring physicians and can result in higher adherence rates with follow-up recommendations.
Measure Type	Process
Measure Level	Individual and Group Level
Measure Rationale	Low adherence to radiology follow-up recommendations may be due in part by ineffective communication to the responsible provider and cause low priority for providers taking care of critically ill patients. ¹ Including distinct data elements within the radiology report (e.g., specificity of lesion/mass location, recommended imaging modality for follow up, and time interval for follow-up imaging) would support effective communication regarding the radiologist-recommended follow-up imaging. ^{i, iii, iv}
Measure Description	Percentage of all final reports containing actionable incidental findings ¹ with recommendations for follow-up imaging that include a reference to an evidence-based recommendation ² within the impression or conclusion section.
Denominator	All final reports with actionable incidental findings ¹ .
Numerator	Actionable incidental findings ¹ include a reference to an evidence-based recommendation within the impression or conclusion section.
Denominator Exceptions	None

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Definitions	<p>¹ An actionable incidental finding is a mass or lesion detected on cross-sectional imaging* of the head, neck, chest, abdomen, or pelvis not related to the reason for imaging that represents a finding for which non-emergent follow-up is recommended.</p> <p>*Cross-sectional imaging refers to CT, MRI, PET, and SPECT and related imaging techniques, that view the body in cross-section i.e. as axial (cross-sectional) slices. (Bell, DJ, et al. Cross-sectional imaging. https://radiopaedia.org/articles/cross-sectional-imaging-1?lang=us. Last accessed on October 12, 2020.)</p> <p>² An evidence-based recommendation refers to recommendations that are informed by the integration of expert opinion with the best available clinical evidence from systematic research. These recommendations come from a variety of sources including national, international or local clinical practice guidelines informed by peer reviewed evidence.</p>
Guidance	<p>Note: If a report contains multiple actionable findings with follow-up recommendations, each actionable incidental finding should be¹ documented.</p> <p>Woloshin S, Schwartz LM, Dann E, Black WC. Using radiology reports to encourage evidence-based practice in the evaluation of small, incidentally detected pulmonary nodules. A preliminary study. Ann Am Thorac Soc. 2014 Feb;11(2):211-4. doi: 10.1513/AnnalsATS.201307-242BC. PMID: 24354970.</p> <p>McDonald JS, Koo CW, White D, Hartman TE, Bender CE, Sykes AG. Addition of the Fleischner Society Guidelines to Chest CT Examination Interpretive Reports Improves Adherence to Recommended Follow-up Care for Incidental Pulmonary Nodules. Acad Radiol. 2017 Mar;24(3):337-344. doi: 10.1016/j.acra.2016.08.026. Epub 2016 Oct 25. PMID: 27793580; PMCID: PMC5309169.</p>

ⁱ <https://www.ncbi.nlm.nih.gov/pubmed/27743142>

ⁱⁱ <http://www.ihl.org/resources/Pages/Publications/Closing-the-Loop-A-Guide-to-Safer-Ambulatory-Referrals.aspx>

ⁱⁱⁱ <https://www.atsjournals.org/doi/pdf/10.1513/AnnalsATS.201307-242BC>

^{iv} <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5977608/>

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Measure 6: Communication to the practice managing on-going care

Measure Purpose	This measure aims to ensure there is communication between radiologists and referring physicians or other clinicians regarding new actionable incidental findings ¹ with recommendations for follow-up.
Measure Type	Process
Measure Level	Group and Facility Level
Measure Rationale	Radiology practices have developed processes for closed-loop communication and imaging studies tracking in which non-urgent follow-up imaging was recommended for actionable incidental findings. ^{i, ii, iii} For example, one study demonstrated an improvement in performance of recommended follow-up from 43.1 to 70.5 percent. ^{iv}
Measure Description	Percentage of final reports containing actionable incidental findings ¹ with recommendations for follow-up imaging where the findings were directly communicated to the referring physician or clinician.
Denominator	All final reports with actionable incidental findings ¹
Numerator	Actionable incidental findings ¹ with documentation of direct communication ² of findings to the referring physician within 5 business days of exam interpretation
Denominator Exceptions	Documentation of reason(s) for not communicating ² findings and recommendations, such as: Medical reasons: <ul style="list-style-type: none"> • Enrollment in hospice and palliative care • Presence of known terminal or end-stage diagnoses. <i>Note:</i> this exception promotes clinical judgement and addresses appropriateness of imaging.
Definitions	¹ An actionable incidental finding is a mass or lesion detected on cross-sectional imaging* of the head, neck, chest, abdomen, or pelvis not related to the reason for imaging that represents a finding for which non-emergent follow-up is recommended. *Cross-sectional imaging refers to CT, MRI, PET, and SPECT and related imaging techniques, that view the body in cross-section i.e. as axial (cross-sectional) slices. (Bell, DJ, et al. Cross-sectional imaging. https://radiopaedia.org/articles/cross-sectional-imaging-1?lang=us . Last accessed on October 12, 2020.)

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	<p>² Per the ACR Practice Parameter for Communication of Diagnostic Imaging Findings, routine reporting of imaging findings is communicated through the usual channels established by the hospital or diagnostic imaging facility. However, in emergent or other non-routine clinical situations*, the interpreting physician should expedite the delivery of a diagnostic imaging report (preliminary or final) in a manner that reasonably ensures timely receipt of the findings. This communication will usually be to the referring physician/health care provider or their designee. When the referring physician/health care provider cannot be contacted expeditiously, it may be appropriate to convey results directly to the patient, depending upon the nature of the imaging findings.</p> <p>*Situations that may warrant non-routine communications include: Findings that the interpreting physician reasonably believes are significant and unexpected, may have a reasonable probability of impacting the patient’s health, and may not require immediate attention but, if not acted on, may worsen over time and likely result in an adverse patient outcome.</p> <p>Communication methods are dynamic and varied. It is important that nonroutine communications be handled in a manner most likely to reach the attention of the treating or referring physician/health care provider in time to provide the most benefit to the patient. Communication by telephone or in person to the treating or referring physician or a responsible health care provider is appropriate and reasonably ensures receipt of the findings. This may be accomplished directly by the interpreting physician or, when judged appropriate, by the interpreting physician’s designee. There are other forms of communication that provide documentation of receipt that may also suffice to demonstrate that the communication has been delivered and acknowledged.</p>
Guidance	<p>Communication can be to the practice managing on-going care or referring physician if a primary care clinician not identified. Communication may include documentation in the medical record indicating that the physician or practice communicated (e.g., verbally, by postal delivery, through shared electronic health record with acknowledgement functionality, other health information technology tools) with the clinician managing the patient’s on-going care.</p> <p>Kuhn KJ, Larson DB; 2020 Radiology Improvement Summit Critical Results Workgroup. Critical Results in Radiology: Defined by Clinical Judgment or by a List? J Am Coll Radiol. 2021 Feb;18(2):294-297. doi: 10.1016/j.jacr.2020.07.009. Epub 2020 Aug 9. PMID: 32783896.</p>

¹ <https://www.ncbi.nlm.nih.gov/pubmed/28742377>

ⁱⁱ <https://www.ncbi.nlm.nih.gov/pubmed/29119408>

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ⁱⁱⁱ <https://www.ncbi.nlm.nih.gov/pubmed/27743142>

^{iv} <https://www.ncbi.nlm.nih.gov/pubmed/28742377>

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Measure 7: Communication of actionable incidental findings to the patient

Measure Purpose	This measure aims to ensure that there is communication between radiologists, referring physicians, or other clinicians and patients regarding actionable incidental findings ¹ with recommendations for follow-up.
Measure Type	Process
Measure Level	Facility/System Level
Measure Rationale	<p>Discrepancies exist among radiologists and other clinicians regarding the entity (i.e., radiologist, referring clinician, primary care clinicians (if not the referring clinician), or the practice managing care) responsible for communicating with patients about newly discovered actionable incidental findings and the associated radiologist-recommended follow-up.ⁱ This may establish inaccurate assumptions about who (on the care team) is communicating the information to the patient regarding non-critical actionable incidental findings.</p> <p>Patients experience increased anxiety resulting from the receipt of imaging results through traditional non-immediate methods of communication (e.g., verbally, by postal delivery, shared electronic health record, or electronic patient portal). Immediately discussing imaging results with their radiologist following the discovery of an imaging finding has been demonstrated to reduce patient anxiety levels.ⁱⁱ</p>
Measure Description	Percentage of final reports containing actionable incidental findings ¹ with recommendations for follow-up imaging where the findings were communicated ² to the patient.
Denominator	All final reports with actionable incidental findings ¹ .
Numerator	Actionable incidental findings with documentation of direct communication ² of findings to the patient within 30 business days of exam interpretation.
Denominator Exceptions	None
Definitions	<p>¹ An actionable incidental finding is a mass or lesion detected on cross-sectional imaging* of the head, neck, chest, abdomen, or pelvis not related to the reason for imaging that represents a finding for which non-emergent follow-up is recommended.</p> <p>*Cross-sectional imaging refers to CT, MRI, PET, and SPECT and related imaging techniques, that view the body in cross-section [e.g.,] as axial (cross-sectional)</p>

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	<p>slices. (Bell, DJ, et al. Cross-sectional imaging. https://radiopaedia.org/articles/cross-sectional-imaging-1?lang=us. Last accessed on October 12, 2020.)</p> <p>² Per the ACR Practice Parameter for Communication of Diagnostic Imaging Findings, routine reporting of imaging findings is communicated through the usual channels established by the hospital or diagnostic imaging facility. However, in emergent or other non-routine clinical situations*, the interpreting physician should expedite the delivery of a diagnostic imaging report (preliminary or final) in a manner that reasonably ensures timely receipt of the findings. This communication will usually be to the referring physician/health care provider or their designee. When the referring physician/health care provider cannot be contacted expeditiously, it may be appropriate to convey results directly to the patient, depending upon the nature of the imaging findings.</p> <p>*Situations that may warrant non-routine communications include: Findings that the interpreting physician reasonably believes are significant and unexpected, may have a reasonable probability of impacting the patient's health, and may not require immediate attention but, if not acted on, may worsen over time and likely result in an adverse patient outcome.</p> <p>Communication methods are dynamic and varied. It is important that nonroutine communications be handled in a manner most likely to reach the attention of the treating or referring physician/health care provider in time to provide the most benefit to the patient. Communication by telephone or in person to the treating or referring physician or a responsible health care provider is appropriate and reasonably ensures receipt of the findings. This may be accomplished directly by the interpreting physician or, when judged appropriate, by the interpreting physician's designee. There are other forms of communication that provide documentation of receipt that may also suffice to demonstrate that the communication has been delivered and acknowledged.</p>
Guidance	Communication to the patient may include documentation in the medical record indicating that the clinician or practice communicated the findings with the patient (e.g., verbally, by postal delivery, shared electronic health record, electronic patient portal, other health information technology tools).

ⁱ <https://www.jacr.org/action/showPdf?pii=S1546-1440%2820%2931405-8>

ⁱⁱ <https://www.ajronline.org/doi/abs/10.2214/AJR.19.22264?journalCode=ajr>

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Measure 8: Tracking and reminder system for incidental findings

Measure Purpose	This measure aims to ensure there is a system in place to track and provide means for monitoring completion of recommended follow-up of actionable incidental findings. ¹
Measure Type	Process
Measure Level	Group, Facility, or Health System Level
Measure Rationale	Radiology practices have developed processes for closed-loop communication and the tracking of imaging studies in which non-urgent follow-up imaging was recommended. ^{i, ii, iii} For example, one study demonstrated an improvement in performance of recommended follow-up from 43.1% to 70.5%. ^{iv} Efficient tracking systems for patients with radiologist-recommended follow-up imaging formalize processes for monitoring whether the follow-up imaging occurs. Such tracking systems should capture patient receipt of the recommended follow-up imaging, associated final radiology report, and appropriate next steps resulting from the recommended follow-up imaging study's results. ^v
Measure Description	Percentage of final reports containing actionable incidental findings ¹ for which the information was entered into a tracking and reminder system with a target due date for follow-up imaging.
Denominator	All final reports with actionable incidental findings.
Numerator	Actionable incidental findings ¹ with targeted follow-up imaging due dates were entered into a tracking and reminder system.
Denominator Exceptions	None
Definitions	<p>¹ An actionable incidental finding is a mass or lesion detected on cross-sectional imaging* of the head, neck, chest, abdomen, or pelvis not related to the reason for imaging that represents a finding for which non-emergent follow-up is recommended.</p> <p>*Cross-sectional imaging refers to CT, MRI, PET, and SPECT and related imaging techniques, that view the body in cross-section i.e. as axial (cross-sectional) slices. (Bell, DJ, et al. Cross-sectional imaging. https://radiopaedia.org/articles/cross-sectional-imaging-1?lang=us. Last accessed on October 12, 2020.)</p>

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Guidance	<p>The tracking and reminder system should include the following elements at a minimum: patient identifier and contact information, as well as information relevant to the recommended follow-up. An optimal tracking system would include follow-up results (e.g., cancer detection) and be linked to a process for contacting patients who have not yet received recommended follow-up within the recommended time interval.</p> <p>Institute of Medicine (US) and National Research Council (US) National Cancer Policy Board; Curry SJ, Byers T, Hewitt M, editors. Washington (DC): National Academies Press (US); 2003.</p>
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ⁱ <https://www.ncbi.nlm.nih.gov/pubmed/28742377>

ⁱⁱ <https://www.ncbi.nlm.nih.gov/pubmed/29119408>

ⁱⁱⁱ <https://www.ncbi.nlm.nih.gov/pubmed/27743142>

^{iv} <https://www.ncbi.nlm.nih.gov/pubmed/28742377>

^v <https://www.ncbi.nlm.nih.gov/books/NBK223927/#ddd00257>

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Measure 9: Patients' cancer detection rate with follow-up imaging (surveillance measure)

Measure Purpose	This measure aims to collect, or document cancer rates based on follow-up imaging recommendations of actionable incidental findings ¹ .
Measure Type	Outcome
Measure Level	Group Level
Measure Description	Percentage of patients with actionable incidental findings ¹ who received a diagnosis of cancer, or confirmed non-progression ² of cancer, made as a result of radiologist-recommended follow-up imaging.
Denominator	All patients with a potentially pre-cancerous actionable incidental finding(s).
Numerator	Patients who received diagnosis of cancer or confirmed non-progression ² of cancer of the lesion five years after the initial actionable incidental finding.
Denominator Exceptions	None
Definitions	<p>¹ An actionable incidental finding is a mass or lesion detected on cross-sectional imaging* of the head, neck, chest, abdomen, or pelvis not related to the reason for imaging that represents a finding for which non-emergent follow-up is recommended.</p> <p>*Cross-sectional imaging refers to CT, MRI, PET, and SPECT and related imaging techniques, that view the body in cross-section i.e. as axial (cross-sectional) slices. (Bell, DJ, et al. Cross-sectional imaging. https://radiopaedia.org/articles/cross-sectional-imaging-1?lang=us. Last accessed on October 12, 2020.)</p> <p>² Progression describes the course of a disease, such as cancer, as it becomes worse or spreads in the body.</p>
Guidance	Note: This measure will be stratified and reported by lesion type and results. It is not intended for users to report an aggregated rate.