NIRADS Measure Development TEP
Post-TEP Meetings Narrative Specifications
March 3, 2026

## Use of NI-RADS Reporting in Post-Treatment Head and Neck Cancer Imaging Reports

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| **Measure Description** | Percentage of finalized post-treatment surveillance neck imaging reports (CT with contrast, MRI without and with contrast, or FDG PET imaging) for patients with treated head and/or neck squamous cell carcinoma that include a dedicated section describing:<br>1) The primary tumor site and lymph nodes using terminology mapping to the NI-RADS Categories of Suspicion and associated imaging findings; ***AND***<br>2) An Impression with the corresponding NI-RADS management recommendations for the primary tumor site and lymph nodes, based on the documented NI-RADS categories. |
| **Measure Type** | Process |
| **Measure Level** | Individual and Group Levels |
| **Denominator** | All patients, regardless of age, with a documented history of treated head and/or neck squamous cell carcinoma who undergo post-treatment surveillance imaging of the neck (CT with contrast, MRI without and with contrast, FDG PET imaging).<br>*Denominator Note: This measure only applies to imaging studies that are performed specifically for squamous cell carcinoma follow-up/surveillance.* |
| **Exclusions** | Patients with neck disease related to squamous cell carcinoma of unknown primary. |
| **Numerator** | Final reports that provide:<br>1. A description of the primary tumor site and lymph nodes using terminology mapping to the NI-RADS Categories of Suspicion and associated imaging findings; ***AND***<br>2. An Impression with the corresponding NI-RADS management recommendations for the primary tumor site and lymph nodes, based on the published NI-RADS categories.<br>**Performance Met:** All the elements listed in the numerator are included in the Findings and impression sections of the final signed report.<br>**Performance Not Met:** Any of the elements listed in the numerator are missing in the Findings and impression sections of the final signed report. |
| **Exceptions** | Technical reasons that prevent documentation of NI-RADS categories or NI-RADS-equivalent terminology and/or the inclusion of corresponding NI-RADS management recommendations—such as insufficient image quality, nondiagnostic study |

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| | conditions, or MRI studies that do not include necessary sequences (e.g., T1, T2, DWI, or post-contrast T1).<br><br>*Note*: *These examples are not exhaustive; any documented technical limitation preventing appropriate assessment may be considered.* |
| **Guidance** | This measure is informed by the ACR NI-RADS framework, which characterizes recurrence likelihood using standardized category definitions across CT, MRI, and PET/CT imaging.<br><br>For this measure, radiologists may vary the language they use to describe the primary tumor site and lymph nodes, as long as it maps to NI-RADS categories.<br><br>For clarity, standardization, and measure feasibility, radiologists must use the NI-RADS categories separately for the primary site and for lymph nodes, in the Impression. Additional language may be added, as deemed necessary.<br><br>**The following language supports non-NI-RADS-adopting practices use of this measure which closely mirrors NI-RADS**, thereby creating a practical pathway toward future NI-RADS adoption.<br><br>**NI-RADS 1: Low likelihood of recurrence**<br>Primary Tumor Site – Terminology consistent with this category<br>• Post-treatment appearance without concerning mass-like features<br>• No discrete enhancing mass or nodularity at the primary site<br>• Only expected post-therapy mucosal or soft-tissue changes<br>• No suspicious diffusion abnormality or focal hypermetabolism when applicable<br>Lymph Nodes – Terminology consistent with this category<br>• No suspicious cervical adenopathy<br>• Residual treated nodal tissue without worrisome morphology<br>• No abnormal nodal enlargement or suspicious enhancement<br>• No abnormal nodal metabolic activity when PET is available<br><br>**NI-RADS 2: Low but non-zero suspicion**<br>Primary Tumor Site – Terminology consistent with this category<br>• Subtle or non–mass-like mucosal/soft-tissue enhancement that is indeterminate<br>• Equivocal deep soft-tissue changes not typical of definite recurrence<br>• Mild focal hypermetabolism without a definite anatomic correlate<br>• Findings suggest low but non-zero suspicion; short-interval assessment may be appropriate<br>Lymph Nodes – Terminology consistent with this category<br>• Indeterminate nodal findings (e.g., mild asymmetry or heterogeneous enhancement) without overt malignant features<br>• Mild nodal hypermetabolism in a treated region without a clear structural correlate<br>• New or slightly enlarged node lacking definitive suspicious morphology<br>• Discordant PET/anatomic findings that remain equivocal |

**NI-RADS 3: High suspicion for recurrence**

Primary Tumor Site – Terminology consistent with this category

- New or enlarging mass-like or nodular soft tissue at the primary site
- Convincing focal hypermetabolism concordant with a suspicious structural abnormality
- Restricted diffusion or enhancement patterns strongly concerning recurrence
- Imaging appearance highly suspicious for recurrent disease

Lymph Nodes – Terminology consistent with this category

- New or enlarging nodal mass with suspicious morphology
- Focal nodal hypermetabolism concordant with anatomic abnormality
- Extracapsular spread features or other high-risk characteristics on anatomic imaging
- Overall appearance highly suspicious for metastatic nodal recurrence

**NI-RADS 4: Definitive recurrence**

Primary Tumor Site – Terminology consistent with this category

- Definite radiologic progression consistent with recurrent tumor
- Clear recurrent mass with interval growth or invasion
- Pathology-proven recurrence (when available) or unequivocal imaging evidence
- Imaging findings necessitating definitive therapeutic intervention

Lymph Nodes – Terminology consistent with this category

- Definite progression of nodal disease on serial imaging
- Pathology-confirmed nodal metastasis (when available) or unequivocal imaging evidence
- New metastatic node(s) requiring clinical intervention
- Clear interval worsening of nodal disease burden

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| **Rationale** | To reduce unwarranted variation and promote timely, targeted follow-up, this measure standardizes two report elements in post-treatment head and neck cancer surveillance: (1) a dedicated section documenting both the primary site and lymph nodes using NI-RADS categories or NI-RADS-aligned terminology, and (2) an impression with corresponding, explicit recommendations. The approach reflects consensus guidance on structured reporting and category-linked management (Aiken et al., 2018; Strauss, Aiken, Lantos, & Phillips, 2021), is supported by meta-analytic evidence of diagnostic discrimination (Baba, Kurokawa, Kurokawa, Yanagisawa, & Srinivasan, 2023), and aligns with current CT, PET/CT, and MRI recommendations—including evidence for the central role of post-contrast MRI where appropriate (Bunch et al., 2025; Parillo et al., 2025; American College of Radiology [ACR], 2026).<br><br>**Care Gap**<br>Post-treatment head and neck cancer surveillance imaging is complex due to surgical reconstruction and radiation-related changes, which leads to wide inter-reader variability in how recurrence risk is described and how next steps are communicated; a structured approach reduces ambiguity and improves care coordination (Strauss, Aiken, Lantos, & Phillips, 2021; Aiken et al., 2018).<br><br>Beyond formal NI-RADS adoption, two universal gaps persist across practice settings: (1) lack of consistency regarding recurrence risk communication for both the primary site and cervical lymph nodes, and (2) explicit, actionable management recommendations in the impression. Requiring a dedicated section documenting both the primary site and lymph nodes using NI-RADS categories and NI-RADS-aligned terminology, together with recommendations that correspond to the expressed level of suspicion, addresses these gaps while enabling participation by practices not yet using numeric labels (Aiken et al., 2018; American College of Radiology, 2026).<br><br>Implementation experience indicates that standardized surveillance reports are clearer and more helpful for referring providers, and radiologists report improved consistency after adoption—supporting the feasibility and usability of these structured reporting elements (Bunch et al., 2021).<br><br>**Clinical Justification**<br>A systematic review and meta-analysis demonstrated strong diagnostic discrimination of recurrence across NI-RADS categories at both the primary site and cervical nodes, with substantially higher recurrence at higher categories and excellent diagnostic performance using category 3 as a cutoff; this supports the value of category-based (or category-aligned) stratification in post-treatment surveillance reporting (Baba, Kurokawa, Kurokawa, Yanagisawa, & Srinivasan, 2023).<br><br>Consensus guidance from the ACR white paper and AJR best practices emphasizes standardizing post-treatment reporting with a common lexicon, explicit levels of suspicion, and linked management recommendations—the same elements operationalized by |

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| | requiring a dedicated primary-and-nodal section and impression-level recommendations (Aiken et al., 2018; Strauss et al., 2021).<br><br>NI-RADS is modality-current: guidance spans CT and PET/CT, and the MRI v2025 update reflects modality-specific descriptors and management. Contemporary reviews also support the central role of post-contrast MRI for accurate assessment of treated sites (with limited, defined exceptions), aligning with the specification's modality-appropriate application (Bunch et al., 2025; Parillo et al., 2025).<br><br>**Implementation & Feasibility**<br>Allowing NI-RADS categories or NI-RADS-aligned terminology enables participation by practices that have not fully adopted numeric labels while preserving the underlying interpretive framework and expectations for actionability (ACR, 2026).<br><br>Real-world implementation shows that referring providers find standardized reports clear and actionable, and radiologists report improved consistency with increasing utilization—evidence that supports the routine usability of the measure's structured elements (Bunch et al., 2021).<br><br>**Value to Patients and the Health System**<br>When the report explicitly states the level of suspicion for both the primary site and lymph nodes and pairs it with concordant, actionable recommendations, teams can prioritize short-interval reassessment, targeted additional imaging, or tissue sampling when warranted, reducing downstream ambiguity and supporting earlier detection of true recurrence (Strauss et al., 2021; Baba et al., 2023)<br><br>Standardized documentation and recommendation patterns also enable reliable quality assessment across community and academic settings without mandating identical templates, supporting consistent improvement in surveillance care (Aiken et al., 2018).<br><br>**Cost Savings**<br><br>1. *Reducing unnecessary downstream procedures:* In the posttreatment setting for head and neck squamous cell carcinoma, ambiguous or inconsistent reports can lead to avoidable biopsies, repeat imaging, and prolonged follow-up, all of which drive up costs. One retrospective analysis (not a formal economic study but demonstrating clinical impact) found that incorporating NI-RADS into routine surveillance improved management decisions and reduced unnecessary biopsies [Yeerasam 2026].<br>2. *Better communication and decision support:* Structured templates enhance clarity. Referring clinicians report that NI-RADS-based reports are easier to interpret, supporting more efficient decision-making. This improved consistency can also reduce redundant testing and clinic visits that often stem from unclear narrative reports [Vertulli 2025].<br>*3. Potential workflow and productivity improvements (general to structured reporting):* |

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| | The broader structured-reporting literature demonstrates several workflow benefits across radiology modalities, including fewer equivocal terms, faster report generation, improved completeness, and reduced reporting errors [Nobel 2021]. |
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