Measure 5: Use of Quantitative Criteria for Oncologic FDG PET Imaging

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| --- | --- |
| Measure Purpose | This measure aims to improve the quality and comparability of final reports for FDG PET scans for patients with non-CNS cancer by ensuring important core elements are included. |
| Measure Description | Percentage of final reports for all patients, regardless of age, undergoing non-CNS oncologic FDG PET studies that include at a minimum:   1. Serum glucose (e.g., finger stick at time of injection) 2. Uptake time (interval from injection to initiation of imaging) 3. One reference background (e.g., volumetric normal liver or mediastinal blood pool) SUV measurement, along with description of the SUV measurement type (eg, SUVmax) and normalization method (e.g., BMI) 4. At least one lesional SUV measurement **OR** diagnosis of "no disease-specific abnormal uptake" |
| Numerator Statement | Final reports for FDG PET scans that include at a minimum:   1. Serum glucose (eg, finger stick at time of injection) 2. Uptake time (interval from injection to initiation of imaging) 3. 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) 4. At least one lesional SUV measurement **OR** diagnosis of "no disease-specific abnormal uptake" |
| Denominator Statement | All final reports for all patients, regardless of age, undergoing non-CNS oncologic FDG PET studies |
| Denominator Exclusions | None |
| Denominator Exceptions | None |
| Supporting Guidelines and Other References | The following evidence statements are quoted verbatim from the referenced clinical guidelines and other sources, where applicable:  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)[[1]](#endnote-1)  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)23 |
| Rationale | The diagnostic imaging report is the primary vehicle to communicate imaging study results in patients with cancer. Results of imaging studies often play a major role in diagnostic clarification and the development of treatment plans. These reports should be complete and accurate to minimize the risk of diagnosis and treatment based on insufficient or incorrect evidence. Yet, it has been demonstrated that 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.[[2]](#endnote-2) Excluding these components may adversely affect comparison with subsequent and prior studies.[[3]](#endnote-3) |
| Measure Designation | |
| Measure Use | Quality Improvement  Accountability |
| Measure Type | Process |
| **Level of Measurement** | Individual Practitioner  Group Practice |
| **Care Setting** | OutpatientInpatient |
| **Improvement Notation** | Higher score indicates better quality |
| **National Quality Strategy Priority/CMS Measure Domain** | ☒ Communication and Care Coordination  ☐ Community/Population Health  ☒ Effective Clinical Care  ☐ Efficiency and Cost Reduction  ☐ Patient Safety  ☐ Person and Caregiver-Centered Experience |

**eSpecifications Element Table (eSET)** © Swain Eng and Associates

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| eSpec Component | QDM Datatype | Value Set Name/OID | Code System | CQL (definition/  Parameter/function) | Comments |
|  |  |  |  |  |  |
| Initial Population | Measure timing | n/a | n/a | “Measurement Period” |  |
|  | Diagnosis | Options:  1)All Cancer (NCQA)  2.16.840.1.113883.3.464.1003.108.12.1011 (ICD9, ICD10, SNOMEDCT)  2)Cancer (PCPI)  2.16.840.1.113883.3.526.3.1010 (ICD9, ICD10, SNOMEDCT)  3) Create a new ACR value set | See prior column | ["Diagnosis": "All Cancer"] | Any cancer diagnoses in NCQA and PCPI value sets. Because this measure is now Non CNS would probably need to create a new value set. |
|  | Diagnostic study, Performed | FDG PET Scan Group  2.16.840.1.113762.1.4.1120.239 | Group  LOINC  SNOMEDCT | ["Diagnostic Study, Performed": "FDG PET Scan Group"] | During the measurement period |
|  | Attribute: Status | Final Radiology reports  2.16.840.1.113762.1.4.1120.4 (draft) | Group  SNOMEDCT | .result as Code in "Radiology Final Report" | During the measurement period |
|  |  |  |  |  |  |
| Denominator | Equals Initial Population |  |  |  |  |
|  |  |  |  |  |  |
| Numerator | Laboratory Test, Performed or | Serum Glucose Group  2.16.840.1.113762.1.4.1120.242 | Group  LOINC  SNOMEDCT | ["Laboratory Test, Performed": "Serum Glucose Group"] | During measurement period. Because the glucose may be read by radiologist and not lab consider also “Procedure, Performed or Assessment, Performed” |
|  |  | Uptake time (interval from injection to initiation of imaging) |  | Logic? | Is there a valueset associated with this or just a question of developing the CQL logic? Not sure if this possible in eCQM to record. |
|  |  | One reference background (e.g., volumetric normal liver or mediastinal blood pool) SUV measurement, along with description of the SUV measurement type (eg, SUVmax) and normalization method (e.g., BMI)  Not sure how to develop the QDM for this and any associated codes. |  | Logic? | Not sure if this possible in eCQM to record. |
|  |  | At least one lesional SUV measurement **OR** diagnosis of "no disease-specific abnormal uptake  Codes for “SUV measurement: couldn’t locate. How to define “no disease specific abnormal uptake” in codes? |  | Logic? | Not sure if this possible in eCQM to record. |
|  | Attribute: Status | Final Radiology reports  2.16.840.1.113762.1.4.1120.4 (draft) | Group  SNOMEDCT | .result as Code in "Radiology Final Report" | During the measurement period |
|  |  |  |  |  |  |
| Exclusions |  | NONE |  |  |  |
|  |  |  |  |  |  |
| Exceptions |  | None |  |  |  |

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 [↑](#endnote-ref-1)
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. [↑](#endnote-ref-2)
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. [↑](#endnote-ref-3)