Revised April 8, 2025
Final Draft

QACRad41: Use of Quantitative Criteria for Oncologic FDG PET Imaging	
Measure Description:	Percentage of final reports for all patients, regardless of age, undergoing non-CNS oncologic FDG PET studies that include, at a minimum: a) Uptake time (interval from injection to initiation of imaging) b) One reference background SUV measurement c) Description of the SUV measurement type d) Normalization method e) At least one lesional SUV measurement OR statement indicating no disease-specific abnormal uptake
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 physiological manifestations seen in the study. There are accepted and established standards for how PET/CTs should be optimally performed and varying from these parameters can affect physiology and therefore the imaging findings. Including technical information like time from FDG injection to imaging 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 metabolic activity. The measurement of SUV values is a surrogate measure of relative metabolic activity, and SUV values are frequently compared between scans. However, the SUV measurement is a normalized value, so it is important to mention the normalization method (by weight, total mass, etc.). Further, SUV measurement is very dependent on technical variables, including glucose level, time for injection of FDG, scanner and processing algorithm, etc. As such, comparing SUV values between

	scanners/imaging centers can be tricky unless similar techniques and protocols are employed. One of the methods used to assess whether 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, for instance using the cerebellum as a standard measure. 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 (i.e., SUV value [and implied aggressiveness] of a particular lesion) on the given scan. 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 not to include certain comparative measures.
Care Setting:	Outpatient hospital, Inpatient hospital
Denominator:	All final reports for all patients, regardless of age, undergoing non-CNS oncologic FDG PET studies
	Denominator CPT Codes: 78811, 78812, 78813, 78814, 78815, 78816, G0219, G0235 **Secondary Denominator Info (Oncologic study using FDG radiopharmaceutical):** DX041
Exclusions:	None
Numerator:	Final reports for FDG PET scans that include at a minimum: a) Uptake time (interval from injection to initiation of imaging) b) One reference background SUV measurement c) Description of the SUV measurement type d) Normalization method e) At least one lesional SUV measurement OR statement indicating no disease-specific abnormal uptake **<u>Numerator Note:</u>** • **Uptake time:** 45 to 90 minutes • **Reference background SUV measurements:** Normal liver, mediastinal blood pool, cerebellum, etc. • **SUV measurement types:** SUVmax, SUVmean, SUVpeak, etc.

	• **Normalization methods:** Body weight, Body Mass Index, Lean Body Mass, Body Surface Area, etc. • **At least one lesional SUV measurement OR statement indicating no disease-specific abnormal uptake:** When appropriate, reports must clearly state that hypermetabolic disease is not present.
	Performance Met (41XPM): Final report includes at a minimum elements a. through e. above. **Performance Not Met: (41XNM):** Final report does not include elements a. through e.
Evidence	American College of Radiology. ACR-ACNM–SNMMI–SPR Practice Parameter for Performing FDG-PT/CT in Oncology. 2021. https://gravitas.acr.org/PPTS/GetDocumentView?docId=173+&releaseId=2. Accessed March 10, 2025 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. 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. Procedure Guideline for Tumor Imaging with ^{18}F-FDG PET/CT 1.0 Dominique Delbeke, R. Edward Coleman, Milton J. Guiberteau, Manuel L. Brown, Henry D. Royal, Barry A. Siegel, David W. Townsend, Lincoln L. Berland, J. Anthony Parker, Karl Hubner, Michael G. Stabin, George Zubal, Marc Kachelriess, Valerie Cronin, Scott Holbrook Journal of Nuclear Medicine May 2006, 47 (5) 885-895; Al-Faham Z, Jolepalem P, Rydberg J, Wong CY. Optimizing 18F-FDG Uptake Time Before Imaging Improves the Accuracy of PET/CT in Liver Lesions. J Nucl Med Technol. 2016 Jun;44(2):70-2. doi: 10.2967/jnmt.115.169953. Epub 2016 Mar 10. PMID: 26966128.