

Trends in PET Scanner Ownership and Leasing by Nonradiologist Physicians

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Purpose: The aim of this study was to examine growth trends in ownership or leasing of private-office PET scanners by nonradiologist physicians.

Materials and Methods: The Medicare Part B Physician/Supplier Procedure Summary Master Files for 2002 through 2007 were used to collect the following data for each PET-related Current Procedural Terminology[®] code: 1) annual procedure volume, 2) places of service for the procedures, and 3) specialties of the physicians filing the claims. To determine ownership or leasing, only technical and global claims that occurred in the nonhospital, private-office setting were included in the study. Professional component–only claims were not included. Procedure volume and growth trends were compared between radiologists and other specialties.

Results: Between 2002 and 2007, radiologist-owned Medicare PET scans increased by 259%, whereas nonradiologist-owned or nonradiologist-leased scans grew by 737%. Five specialty groups accounted for 95% of all nonradiologist PET volume in 2007: internal medicine subspecialties (28,324 studies in 2007), medical oncology (14,320 studies), cardiology (13,724 studies), radiation oncology (9,563 studies), and primary care (2,398 studies). In 2002, of all Medicare PET examinations performed on units owned or leased by physicians, the share for nonradiologists was 13%; their share rose to 24% in 2007.

Conclusion: Although a large percentage of PET scans in private offices are done by radiologists, the growth rate among nonradiologists was far higher between 2002 and 2007 (259% for the former, 737% for the latter). The disproportionately rapid growth of PET scans performed on units owned by nonradiologists raises concern about self-referral at a time when policymakers are struggling to contain costs and reduce radiation exposure.

Key Words: PET, utilization of imaging, self-referral, medical economics, radiology, radiologists, socioeconomic issues

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Imaging costs are the most rapidly rising costs of physician services and have made imaging one of the focuses of concern as policymakers and third-party payers struggle to find ways to control burgeoning health care costs

[1-3]. One of the factors contributing to rising imaging costs is self-referral among nonradiologist physicians, which has been shown to result in the overutilization of imaging [4-12]. Another contributing factor to rising health care costs is the use of new and expensive technologies. A mechanism by which self-referral has been made possible over recent years has been the acquisition or leasing of advanced imaging equipment, such as MRI, CT, and PET scanners, by nonradiologist physicians.

Nonradiologist physicians who own or lease scanners can bill for procedures using either global or technical-component claims. When a physician files under a global claim, the physician can interpret the study or subcontract the interpretation to a radiologist or another nonradiologist physician. On the other hand, if a technical-component claim is filed, the interpretation is billed by another physician (usually, but not necessarily, a radiol-

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This study was supported in part by a grant from the American College of Radiology, Reston, Virginia.

Table 1. PET CPT[®]-4 codes

CPT-4 Code	Code Description	Body Part
78459	Myocardial imaging, PET, metabolic evaluation	Cardiovascular
78491	Myocardial imaging, PET, perfusion; single study at rest or stress	Cardiovascular
78492	Myocardial imaging, PET, perfusion; multiple studies at rest and/or stress	Cardiovascular
78608	Brain imaging, PET; metabolic evaluation	Neurologic
78609	Brain imaging, PET; perfusion evaluation	Neurologic
78811	Tumor imaging, PET; limited area (eg, chest, head/neck)	Body
78812	Tumor imaging, PET; skull base to mid-thigh	Body
78813	Tumor imaging, PET; whole body	Body
78814	Tumor imaging, PET with concurrently acquired CT for attenuation correction and anatomical localization imaging; limited area (eg, chest, head/neck)	Body
78815	Tumor imaging, PET with concurrently acquired CT for attenuation correction and anatomical localization imaging; skull base to mid-thigh	Body
78816	Tumor imaging, PET with concurrently acquired CT for attenuation correction and anatomical localization imaging; whole body	Body
G0219	PET imaging whole body; melanoma for noncovered indications	Body
G0235	PET imaging, any site, not otherwise specified	Body
G0252	PET imaging, full & partial-ring PET scanner only, for initial diagnosis of breast cancer and/or surgical planning for breast cancer (eg, initial staging of axillary lymph nodes)	Body

Note: CPT-4 = Current Procedural Terminology, 4th ed.

ogist) on a separate professional-component claim. Regardless, the referring physician captures the technical revenue and the potential profit.

Studies of MRI and CT ownership or leasing among the Medicare population in recent years have demonstrated that most nonhospital, private-office scans were done in radiologist-owned facilities. However, the growth rate was much higher for nonradiologist physicians [11,12]. The purpose of this study was to perform a similar analysis of trends in ownership or leasing of private-office PET scanners, extending the period of analysis through 2007.

It should be noted that trends in PET ownership may be different from those for CT and MRI because PET is a relatively new technology that was used primarily as a research tool until 2000, when CMS approved it to diagnose 6 types of cancer and as a diagnostic test for heart disease [13]. Moreover, the first commercial PET/CT scanners, which allowed improved diagnostic accuracy, became available in 2001. Last, CT and MRI have widespread clinical applications, whereas PET is used primarily for oncologic indications.

MATERIALS AND METHODS

Data were collected using the Medicare Part B Physician/Supplier Procedure Summary Master Files for 2002 through 2007, which provide utilization data on all *Current Procedural Terminology*[®], 4th ed, codes for the >37

million fee-for-service Medicare beneficiaries in the United States. Only PET-related codes were included in this study (Table 1). The following data points were determined for each code: 1) annual procedure volume, 2) places of services for the procedures, 3) specialties of the physicians filing the claims, and 4) information on whether the claims were professional component-only, technical component-only, or global claims. Place of service was determined by Medicare location codes. The vast majority of imaging studies (>98%) are carried out in hospital inpatient settings, hospital outpatient facilities, private offices, and emergency departments. Provider specialties were determined from Medicare's 108 physician specialty codes. Because our focus was on who owns or leases PET scanners, rather than on who performs the image interpretation, we included all technical-component and global claims and excluded all professional-component claims. Only studies that occurred in the private-office setting were included in this study because physicians rarely own imaging equipment located in hospitals.

Using this methodology, we recorded the specialty of every physician who either owned the equipment on which a PET scan was performed in the private-office setting or leased the private facility from another owner. Some physician specialties were grouped together to simplify data analysis and presentation.

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