WhitePaper

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Reimbursement of Amyloid PET in the United States

For Precision Diagnostics and Treatment in Alzheimer's Disease

Camilia Hoorvash, PhD
Head of Clinical Applications

Date of issuance:
Januar 2026

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Executive Summary

- Amyloid PET has shown to dramatically affect diagnosis and treatment plans through studies such as Imaging Dementia-Evidence for Amyloid Scanning (IDEAS).
- Medicare policy shift in October 2023 broadened access and enabled repeated amyloid PET scans when clinically necessary by removing National Coverage Determination (NCD) 220.6.20, which had previously limited Medicare coverage of beta-amyloid PET to a "once-in-a-lifetime" scan. As of this change, Medicare Administrative Contractors now make localized coverage determinations for amyloid PET.
- Typical national Medicare payments for amyloid PET procedures are in the ~$1,370–$1,550 range for CPT code 78811 or 78814 (limited area PET or PET/CT, respectively); rates are adjusted by local wage indexes. For hospital-based PET facilities, there is a co-payment or co-insurance associated with the procedure. For physician offices and Independent Diagnostic Testing Facilities, the technical component payment for the procedure is carrier priced but is often capped at the OPPS technical component rate and the payment for the diagnostic radiopharmaceutical is based on the invoice cost.
- Medicare reimburses amyloid PET using the same CPT codes and the same national payment rate regardless of the scanner type (e.g. conventional or compact dedicated scanner).
- Successful payment increasingly depends on the quality of documentation, referral rationale, cognitive assessment results, clinical uncertainty, impact on management, and alignment with evidence-based guidelines.

This white paper provides a detailed analysis of the current Medicare reimbursement landscape for amyloid PET, explores the importance of well prepared documentation with strong evidence from a payer and clinical perspective, and proposes strategic recommendations for imaging centers and memory clinics to maximize reimbursement and policy alignment.

Background and Policy change

Amyloid Positron Emission Tomography (PET) is a crucial tool for the diagnosis of Alzheimer's disease (AD), as it allows the noninvasive detection of amyloid plaques, a core neuropathologic feature that defines the disease [1]. Imaging of amyloid deposition using PET has been available in research studies for over two decades and has been approved for clinical use by the United States (U.S.) Food and Drug Administration (FDA), the European Medicines Agency (EMA), and other regulatory agencies around the world [2]. The clinical use of amyloid PET is expected to increase with recent accelerated approvals of antiamyloid monoclonal antibodies for the treatment of mild cognitive impairment (MCI) and mild dementia due to AD.

Until September 2013, there was no Medicare coverage for amyloid PET scans, as the agency found that there was not enough evidence that this imaging technique improved patient health outcomes. From September 2013 to October 2023, amyloid PET in dementia and neurodegenerative disease was covered under Medicare National Coverage Determination (NCD) 220.6.20 only under a strict Coverage-with-Evidence-Development (CED) framework, limiting scans to 'one per patient lifetime' and often tying coverage to clinical studies cohorts either to exclude AD in narrowly defined and clinically difficult differential diagnosis; or to enrich clinical trials seeking better treatment or preventive strategies [3].

Meanwhile, over five years and more than 11,000 scans, Imaging Dementia-Evidence for Amyloid Scanning (IDEAS) researchers found that amyloid PET dramatically affects diagnosis, changing two-thirds of treatment plans [2]. In June 2022, the Centers for Medicare & Medicaid Services (CMS) conducted a National Coverage Analysis (NCA) of NCD 220.6.20. CMS recognized that advances in medical care and treatment of AD including new treatments directed against amyloid have altered application of amyloid PET scans, and appropriate

patient selection is necessary to outweigh harms of therapies. They also agreed that a single lifetime limit is outdated and no longer clinically appropriate. Moreover, the FDA approval of AD monoclonal antibody drug in July 2023, health disparities related to AD prevalence, and under-representation of such groups in AD research were recognized as additional factors to reconsider NCD for amyloid PET imaging. [2,3].

On October 13, 2023, CMS officially retired NCD 220.6.20 ending the prior CED policy requirement scan. With the lifting of the CED stipulation, scans could be covered as part of routine clinical care and the lifetime scan limit was also removed [4]. Following removal of the NCD, local Medicare Administrative Contractors (MACs) [5] have now authority to decide coverage for each case under Section 1862(a)(1)(A) of the Social Security Act with the discretion to make a coverage decision that "better serves the needs of the Medicare program and its beneficiaries at this time" by taking into account local clinical environment and institutional factors.

NCD 220.6.20 NCA TIMELINE

ACTION TAKEN & KEY EVENTS	DATE
Monoclonal Antibodies AD Drug NCD	April 7, 2022
CMS Opens NCA	June 16, 2022
Initial public comment period closes (36 comments)	July 15, 2022
CMS defers issuing a proposed decision memo; considers newly published evidence	December 15, 2022
FDA grants traditional approval of AD Monoclonal Antibody Drug	July 6, 2023
Proposed decision memo posted	July 17, 2023
Second public comment period ends (90 comments)	August 16, 2023
CMS issues final decision memo – Retires NCD 220. 6.20	October 13, 2023

Figure 1: Society of Nuclear Medicine and Molecular Imaging (SNMMI) Amyloid PET Imaging Reimbursement Webinar.[3]

Amyloid PET NCD Retirement Outcome and Significance

In summary, NCD retirement has the below outcomes:

1. The CED framework was removed. Amyloid PET coverage may be within or outside a CMS-approved clinical study.
2. There is no longer a nationwide "one scan per lifetime" limit. That means MACs may cover multiple amyloid PET scans per patient's lifetime, if the MAC determines coverage for the indication and the service is medically necessary. In practice that has allowed use for diagnostic confirmation and where clinically appropriate and authorized by the MAC, repeat scans to document amyloid reduction while on anti-amyloid therapy.
3. CMS allows the contractors to decide whether to cover Amyloid PET. This could result in some non-coverage, as there is currently no Local Coverage Determination (LCD) in place and coverage is determined at the claim processing level.

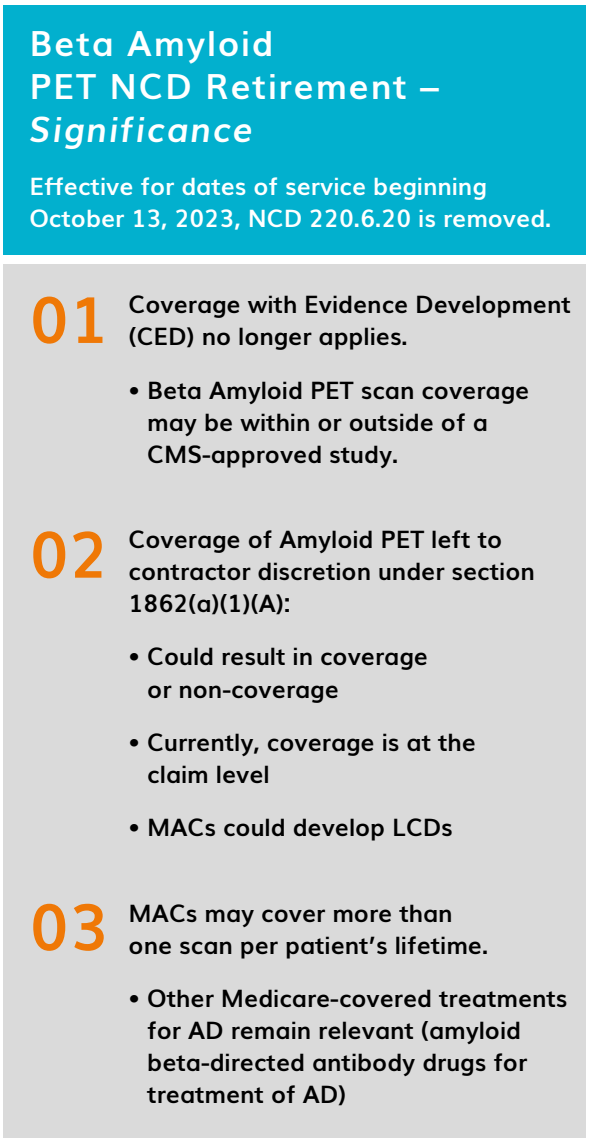

Figure 2: SNMMI Amyloid PET Imaging Reimbursement Webinar.[3]

Current Payment Mechanics

Medicare Administrative Contractors (MACs) (Part A/B)

Briefly, a MAC is a private health care insurer that has been awarded a geographic jurisdiction to process Medicare Part A (Hospital Insurance) and Part B (Medical Insurance) (A/B) medical claims or Durable Medical Equipment (DME) claims for Medicare Fee-For-Service (FFS) beneficiaries[5]. CMS relies on a network of MACs to serve as the primary operational contact between the Medicare FFS program and the health care providers enrolled in the program. Currently, there are 12 A/B MAC jurisdictions and 4 DME MAC jurisdictions, for nearly 35 million FFS beneficiaries.

A/B MACs Jurisdictions

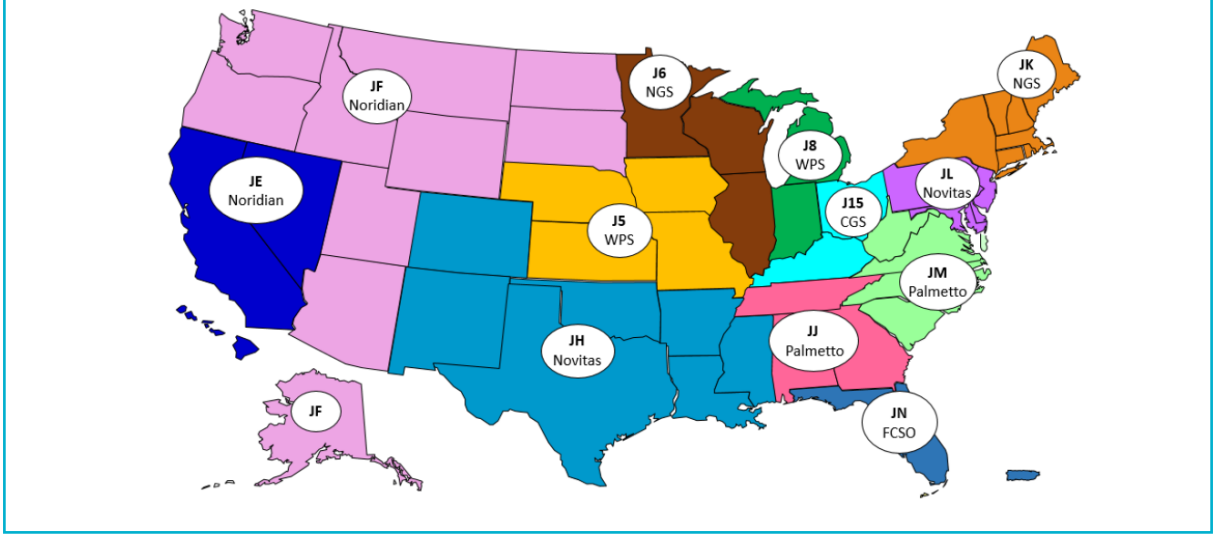

Figure 3: MACs (Part A/B) jurisdictions [5]

Medicare Advantage Plans (MA or Part C)

Medicare Advantage plans (also known as Part C or MA plans) are an alternative to original Medicare offered by private insurance companies approved by Medicare [6]. These plans manage their own claims and payment procedures and are not handled by the MACs. They are required to cover all Part A and Part B services and often bundle in extra benefits like vision, dental, hearing, and prescription drug coverage (Part D). They often use a network of providers, which can limit choices compared to original Medicare. For basic benefits, CMS regulations require MA plans to comply with:

- CMS national coverage determinations;
- General coverage and benefit conditions included in Traditional Medicare laws;
- Written coverage decisions of local Medicare contractors.

Roughly 50–55% of Medicare beneficiaries are enrolled in MA plans. MA plans can set utilization rules and prior-authorization requirements that differ by plan; whereas FFS Medicare uses MAC LCDs.

Amyloid PET Coverage and Regional variability

Since NCD is retired, CMS has stated that "while there will not be an NCD, the MACs also use an evidence-based process for making coverage determinations. Based on the evidence, we believe there will be consistent coverage across regions for appropriate Medicare patients." [4]

Because MACs now make amyloid PET coverage decisions, each clinic needs to check their local MAC policy (or LCD) for each patient's jurisdiction before scheduling/claiming. Contractors will determine coverage under reasonable and necessary standards for the diagnosis or treatment of illness (Section 186(a)(1)(A) of the Social Security Act). Some MACs will endorse coverage for diagnostic indications and for therapy-related monitoring while others may set specific criteria. The plausible eligible pool for amyloid PET is a subset of those with cognitive impairment being worked up for AD/dementia (~millions annually), but coverage depends on local clinical pathways, neurology referrals, and coverage rules.

Appropriate Use Criteria

The updated 2025 Appropriate Use Criteria (AUC) for amyloid PET developed by the Alzheimer's Association and the Society of Nuclear Medicine and Molecular Imaging (SNMMI) specifies appropriate scenarios to perform an amyloid PET as: uncertain diagnosis in MCI or dementia after thorough workup, helping guide management, and assessing eligibility for new therapies, especially anti-amyloid treatments where amyloid presence must be confirmed[7]. Inappropriate uses are typical AD, severity staging, or asymptomatic individuals[7].

CMS is framing medically reasonable use of amyloid PET in agreement with the Alzheimer's Association's AUC for amyloid PET[9]. Although clinical guidance and specialty societies recommend using amyloid PET to confirm baseline amyloid status before initiating anti-amyloid monoclonal antibody (mAb) therapy and to assess amyloid reduction during/after treatment in some protocols (examples in expert guidance suggest PET at ~12–18 months to document amyloid lowering), CMS did not publish a single nationwide frequency rule for monitoring scans, and therefore frequency of coverage for monitoring is decided at the MAC (or within the CED registry rules for the mAb).

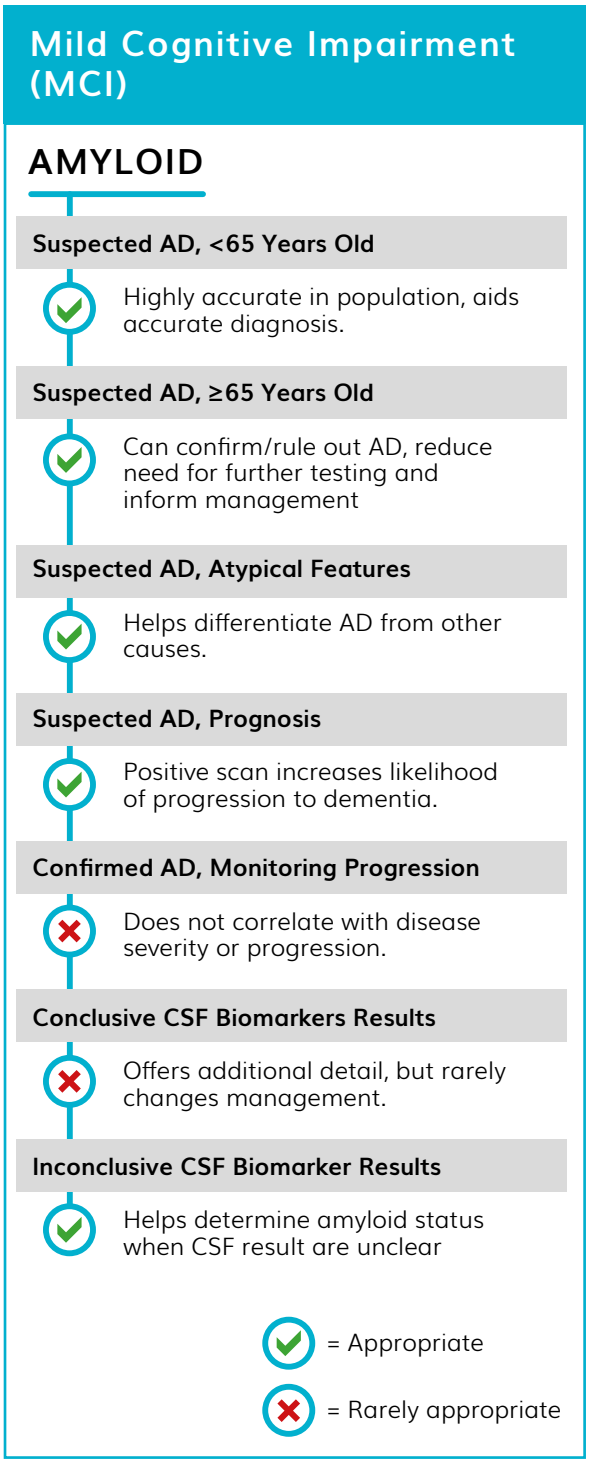

Figure 4: The infographic illustration of the 2025 updated Appropriate Use case (AUC) of Amyloid PET in MCI, developed by the Alzheimer's Association and the Society of Nuclear Medicine and Molecular Imaging (SNMMI)[8]

Relevant Codes

When submitting a claim, the following PET procedure codes may be used for patients insured by Medicare or third-party payers:

- CPT (Current Procedural Terminology) codes used for brain PET are limited area PET or PET/CT codes 78811 or 78814[9].
- Amyloid PET is not a metabolic or perfusion brain imaging, and CPT codes 78608/ 78609 are not correct[3].
- HCPCS (Healthcare Common Procedure Coding System) codes for radiopharmaceutical amyloid tracers: A9586 (florbetapir/Amyvid), Q9982/Q9983 (flutemetamol/florbetaben) (Figure 5)[3,9].
- Billing rules may vary whether the setting is hospital OPPS (Outpatient Prospective Payment System); Independent Diagnostic Testing Facility (IDTF); or physician office[10].

CPT OR HCPCS CODE	LONG DESCRIPTION
78811	**Positron emission tomography (PET) imaging; limited area (eg, chest, head/neck)**
78814	**Positron emission tomography (PET) with concurrently acquired computed tomography (CT) for attenuation correction and anatomical localization imaging; limited area (eg, chest, head/neck)**
A9586	**Florbetapir F-18, diagnostic, per study dose, up to 10 millicuries**
Q9982	**Flutemetamol f18, diagnostic, per study dose, up to 5 millicuries**
Q9983	**Florbetaben f18, diagnostic, per study dose, up to 8.1 millicuries**

Figure 5: Medicare Claims Processing Manual: the correct CPT codes for Amyloid PET are 78811 and 78814 (limited area PET or PET/CT)[3,9]

Hospital-based PET Facilities

The National 2025 OPPS payment for CPT code 78811 or 78814 is on average $1,373 – $1,555, respectively (rates are adjusted by local wage indexes, so the exact payment varies slightly based on region)[10]. Payment for the diagnostic radiopharmaceutical is packaged into the OPPS payment amount. For hospital-based PET facilities, there is a co-payment or co-insurance associated with the procedure – Original Medicare usually pays 80% of the Medicare-approved amount and the patient pays the remaining 20%, subject to deductible rules.

CMS announced (and is implementing) a separate OPPS reimbursement policy for unbundling high-cost diagnostic radiopharmaceuticals starting in 2025 using a Mean Unit Cost (MUC) methodology when the per-day cost exceeds a threshold (currently ~$630/day)[11]. This may increase reimbursed payment per study where a high-cost tracer is used, or enable pass-through arrangements. The new rule primarily affects hospital OPPS payments, but it also changes the marketplace pricing dynamics that clinics must model.

CMS procedure price lookup shows on average a patient pays ~$274 for limited area PET code 78811 and ~$310 for limited area PET/CT 78814- this varies by region and setting[12]:

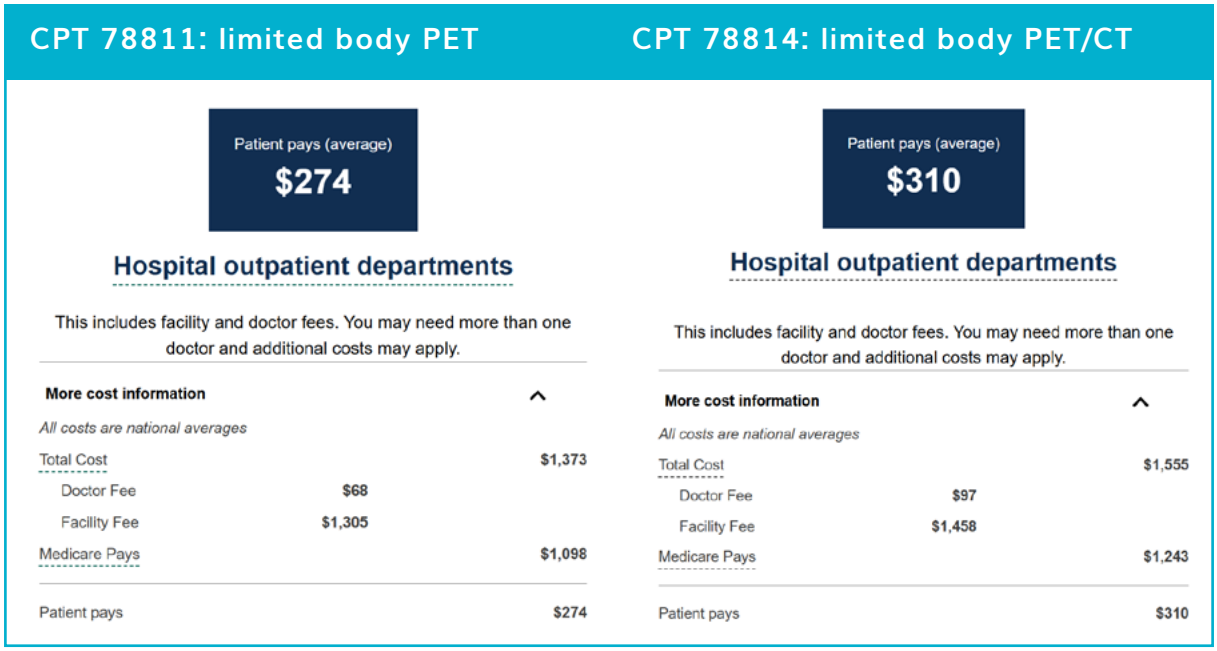

Figure 6: Procedure Price Lookup for Outpatient Services for CPT codes 78811 and 78814 respectively[12]. Costs may vary by location. Prices shown are national averages, based on Medicare's 2025 payments and copayments, and are subject to deductible rules.

Physician Offices and Independent Diagnostic Testing Facilities (IDTFs)

For physician offices and IDTFs, payment is determined by the Medicare Physician Fee Schedule (MPFS). The technical component (TC) payment for the procedure is carrier-priced (now administered by MACs) and in practice is often constrained by reference to the OPPS technical-component level for similar services – so MPFS TC payments commonly trend lower than hospital OPPS facility payments and may be capped implicitly by local contractor policy at the OPPS technical component rate (For CPT 78811 at $1,373 and 78814 at $1,555)[10].

Radiopharmaceutical reimbursement in MPFS/ IDTF settings is often reimbursed based on invoice / acquisition cost (providers submit supporting invoice documentation to substantiate the billed amount). Some MACs publish specific radiopharmaceutical fee schedules reflecting these invoice-based payments[10].

How to Maximize Amyloid PET Reimbursement

Since MACs will evaluate medical necessity, the quality of the specialist attestation, inclusion of objective tests, and a clear management plan tied to the PET result are the decisive factors in approvals, which can make the documentation a burden. The **Medicare Claims Processing Manual**[9] offers guidance on documentation that MACs may require.

Even though traditional Medicare does not require prior authorization, Medicare Advantage almost always does. Dedicated pre-authorization specialist is a person who knows each MAC and Medicare Advantage plan's nuances, tracks submission timing and response times, and communicates with referring clinics on missing documentation. Imaging centers without this role have 2–3 times more denials. IDEAS website offers valuable Reimbursement Resources such as Coverage Letter template, Denial Appeal Letter Template, and Coverage Guidance[10]. It is recommended to train schedulers and prior-authorization staff with a checklist of required documentation. Key clinical information that should be maintained in the medical record includes:

Referral template including a standardized cognitive assessment packet such as Mini mental status exam (MMSE), or similar test score; any neuropsychological tests performed; full neurologic exam; presumptive cause (probable, possible, uncertain AD); any red flags for non-AD pathology; relevant laboratory results (B12, thyroid, etc.); current medications; and what management decision is pending PET (must be explicit); medical necessity must be crystal clear in documentation.

Prior structural imaging results: Medicare expects MRI (preferred) or CT performed before PET.

Clinical Utility/AUC Statement: AUC-based checklists can help as payers look for consistency with PET Amyloid AUC, Neurology society guidelines, and Alzheimer's disease therapy eligibility frameworks. Claims referencing AUC language (in physician notes or report templates) experience significantly fewer denials. A valid statement should include: date of onset of cognitive symptoms; clinical diagnosis (e.g., MCI, dementia); diagnostic uncertainty; why PET is needed (example: MRI/CT inconclusive, atypical presentation, etc.); exactly how the PET result will change management, for example: "positive = Eligibility for anti-amyloid therapy", "negative = Avoid unnecessary therapy". For patients starting therapy, the order must explicitly state: "PET is required to document amyloid reduction for therapy management." determining treatment trajectory. Payers (including MACs and MA plans) want evidence that amyloid PET changes management and improves downstream outcomes/value, especially in the era of anti-amyloid therapies. Many denials occur because the referring provider's notes do not explicitly show how the PET result changes management.

Specialist evaluation: Medicare favors orders coming from: neurology, geriatrics, cognitive disorders specialists, psychiatry (less common but allowable), memory clinic physicians.

Proposed CPT & HCPCS codes: correct CPT and HCPCS codes should be used and – unless radiopharmaceutical is billed separately – radiopharmaceutical HCPCS should be on the same claim (verify payment rules and whether the radiopharmaceutical is packaged). Local Medicare contractor bulletins can inform about the modifier rules.

ICD-10 diagnosis codes that reflect clinical necessity should be used (based on AUC), e.g. G31.84 for Mild Cognitive Impairment (full list in the Medicare Claims Processing Manual[9]).

Structured Reporting: best practices include reporting both visual read findings and quantification (Standard Uptake Value ratio (SUVr) and Centiloid value if available) and a one-line interpretation with referencing thresholds, e.g., "Centiloid < 10: amyloid negative; > 40: amyloid positive in context of AD". SUVr provides a semi-quantification and reproducible evaluation of amyloid burden which demonstrates measurable pathology, especially in ambiguous visual reads, and supports therapy eligibility. The Centiloid scale is a standardized metric (0–100) that allows comparison of amyloid PET measurements across different tracers, scanners, and protocols[13]. It provides quantitative, reproducible amyloid burden estimates that improve interpretability, enabling cross-trial and cross-center harmonization. While not mandatory and not reimbursed separately, quantification is strongly favored in the therapy era because it provides objective evidence of amyloid burden and progression and improves audit defensibility. Emerging anti-amyloid therapies (e.g., mAb) often use amyloid burden thresholds and for Medicare audits and peer reviews, quantification reports are more defensible than purely visual reads, especially when used longitudinally.

Reimbursement for Dedicated Brain PET

Same Reimbursement CPT code for in-house dedicated brain PET

Medicare reimburses amyloid PET using the same CPT codes at the same national payment rate regardless of the scanner type, e.g. whether the scan is acquired with a conventional scanner or a compact dedicated brain PET system. There are no coding penalties, no alternative payment category, and no change in claim requirements, or impact on professional reading fees. This may create economic advantage for clinics owing an in-house low-cost dedicated brain PET as they could generate hospital-level reimbursement using an outpatient-level device with lower associated costs to generate the scan.

Because Medicare reimburses amyloid PET at the same rate regardless of the scanner type, the margin spread favors low-cost compact dedicated brain system.

Faster Scheduling and Start of Treatment

A clinic with anti-amyloid therapy infusion capacity that installs its own dedicated brain PET program may gain competitive clinical and financial advantages under Medicare, as an in-house dedicated brain PET may allow faster turnaround times of PET image scheduling and reporting, which result in faster start of the treatment and billing.

Conclusion

The removal of NCD 220.6.20 for amyloid PET represents a turning point in AD diagnostics under Medicare. With MACs now empowered to make amyloid PET coverage decisions, imaging centers and memory clinics have the opportunity to deliver clinically meaningful, quantitative, and well-documented amyloid PET services. However, success with amyloid PET reimbursement is not defined solely by performing the scan, but also by how well the scan is justified, quantified, documented, and connected to patient management. Regional variability, heavy documentation, operational burden and implementation of pre-authorization workflow are still some of the challenges in receiving reimbursement.

An in-house compact dedicated brain PET with lower capital cost, operational efficiency, and outpatient-friendly workflow may allow neurology and memory-care practices to internalize services traditionally performed in hospital settings without sacrificing Medicare reimbursement, creating competitive clinical and financial advantages.

Disclaimer

The information provided regarding reimbursement of amyloid PET imaging in the United States is for general informational purposes only and may become outdated as policies, regulations, and payer coverage decisions evolve. Positrigo makes no guarantees regarding the accuracy, completeness, or timeliness of this information and is not responsible for any reimbursement outcomes, coverage determinations, or decisions made by Medicare, private insurers, or other third-party payers. Users should consult the relevant payers or official policy sources for the most current and authoritative information.

About the Author

CAMILIA HOORVASH, PHD

Camilia Hoorvash, PhD, completed a Msc and first years of Doctorate research in MRI Neuroimaging from Universities of Joseph-Fourier Grenoble and Aix-Marseille, France, and then received her PhD in Electrical engineering in design and performance improvement of small-animal PET from University of Sherbrooke, Canada, in 2011. She has since worked in the medical industry in roles such as senior scientist and AI enabler at Siemens Healthineers, and digital health and innovation lead in Alzheimer's disease at Roche. She is currently heading the clinical applications of NeuroLF dedicated brain PET at Positrigo.

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Glossary of Abbreviations

ACR	American College of Radiology
AD	Alzheimer's disease
AUC	Appropriate Use Criteria
CED	Coverage with Evidence Development
CMS	the Centers for Medicare & Medicaid Services
CPT	Current Procedural Terminology
DME	Durable Medical Equipment
EMA	European Medicines Agency
FDA	Food and Drug Administration
FFS	Fee-For-Service
FTD	Frontotemporal dementia
HCPCS	Healthcare Common Procedure Coding System
IDEAS	Imaging Dementia-Evidence for Amyloid Scanning
IDTFs	Independent Diagnostic Testing Facilities
LCD	Local Coverage Determination
MA	Medicare Advantage
mAB	anti-amyloid monoclonal antibody
MACs	Medicare Administrative Contractors
MCI	Mild Cognitive Impairment
MITA	Medical Imaging & Technology Alliance
MPFS	Medicare Physician Fee Schedule
MRI	Magnetic Resonance Imaging
NCA	National Coverage Analysis
NCD	National Coverage Determination
OPPS	Outpatient Prospective Payment System
PET	Positron Emission Tomography
ROI	Return on Investment
SUVr	Standard Uptake Value ratio
TC	Technical component

CONTACT

info@positrigo.com

+41 44 51 55 330

Positrigo AG
Technoparkstrasse 1
8005 Zurich
Switzerland

Our office is in:
Zeppelin Wing, 5th Floor, Office 5009-5010