Imaging Dementia Policy

I. Purpose
Indiana University Health Plans (IU Health Plans) considers clinical indications when making a medical necessity determination for Imaging Dementia.

II. Scope
All Utilization Management (UM) staff conducting physical and behavioral health UM review.

III. Exceptions
All other uses of FDG PET for patients with a presumptive diagnosis of dementia-causing neurodegenerative disease (e.g., possible or probable AD, clinically typical FTD, dementia of Lewy bodies, or Creutzfeld-Jacob disease) for which CMS has not specifically indicated coverage continue to be non-covered.

IV. Definitions
None

V. Policy Statements
IU Health Plans considers Imaging Dementia medically necessary for the one of the following indications:

1) Fluoro-D-glucose (FDG) Positron Emission Tomography (PET) scan for the Differential Diagnosis of Alzheimer’s Disease (AD) and Fronto-temporal dementia (FTD) is considered reasonable and medically necessary in patients with a recent diagnosis of dementia and documented cognitive decline of at least 6 months, who meet diagnostic criteria for both AD and FTD. These patients have been evaluated for specific alternate neurodegenerative diseases
or other causative factors, but the cause of the clinical symptoms remains uncertain.

a. **ALL of the following** additional conditions must be met before an FDG PET scan will be covered:

i. The patient’s onset, clinical presentation, or course of cognitive impairment is such that FTD is suspected as an alternative neurodegenerative cause of the cognitive decline. Specifically, symptoms such as social disinhibition, awkwardness, difficulties with language, or loss of executive function are more prominent early in the course of FTD than the memory loss typical of AD

ii. The patient has had a comprehensive clinical evaluation (as defined by the American Academy of Neurology encompassing a medical history from the patient and a well-acquainted informant (including assessment of activities of daily living), physical and mental status examination (including formal documentation of cognitive decline occurring over at least 6 months) aided by cognitive scales or neuropsychological testing, laboratory tests, and structural imaging such as magnetic resonance imaging (MRI) or computed tomography (CT);

iii. The Evaluation of the patient has been conducted by a physician experienced in the diagnosis and assessment of dementia

iv. The evaluation of the patient did not clearly determine a specific neurodegenerative disease or other cause for the clinical symptoms, and information available through FDG PET is reasonably expected to help clarify the diagnosis between FTD and AD and help guide future treatment;

v. The FDG PET scan is performed in a facility that has all the accreditation necessary to operate nuclear medicine equipment. The reading of the scan should be done by an expert in nuclear medicine, radiology, neurology, or psychiatry, with experience interpreting such scans in the presence of dementia

vi. A brain single photon emission computed tomography (SPECT) or FDG PET scan has not been obtained for the same indication. (The indication can be considered to be different in patients who exhibit important changes in scope or severity of cognitive decline, and meet all other qualifying criteria listed above and below (including the judgment that the likely diagnosis remains uncertain.) The results of a prior SPECT or FDG PET scan must have been inconclusive or, in the case of SPECT, difficult to interpret due to immature or inadequate technology. In these instances, an FDG PET scan may be covered after one year has passed from the time the first SPECT or FDG PET scan was performed.)

vii. The referring and billing provider(s) have documented the appropriate evaluation of the Medicare beneficiary. Providers should establish the medical necessity of an FDG PET scan by ensuring that the following information has been collected and is maintained in the beneficiary medical record:

- Date of onset of symptoms;
- Diagnosis of clinical syndrome (normal aging; mild cognitive impairment (MCI); mild, moderate or severe dementia);
- Mini mental status exam (MMSE) or similar test score;
- Presumptive cause (possible, probable, uncertain AD);
- Any neuropsychological testing performed;
- Results of any structural imaging (MRI or CT) performed;
• Relevant laboratory tests (B12, thyroid hormone); and
  Number and name of prescribed medications.

2) FDG PET Requirements for Coverage in the Context of a CMS-approved Practical Clinical Trial
  Utilizing a Specific Protocol to Demonstrate the Utility of FDG PET in the Diagnosis, and Treatment
  of Neurodegenerative Dementing Diseases **all of the following** must be met:

  a. An FDG PET scan is considered reasonable and necessary in patients with MCI or early
dementia (in clinical circumstances other than those specified in subparagraph 1) only in the
context of an approved clinical trial that contains patient safeguards and protections to ensure
proper administration, use and evaluation of the FDG PET scan.

  b) The clinical trial must compare patients who do and do not receive an FDG PET scan and have as
its goal to monitor, evaluate, and improve clinical outcomes. In addition, it must meet **all the
following** basic criteria:
  i) Written protocol on file;
  ii) Institutional Review Board review and approval;
  iii) Scientific review and approval by two or more qualified individuals who are not part of
the research team;
  iv) Certification that investigators have not been disqualified.

VI. **Background**

CMS defines Alzheimer’s Disease (AD) as an age-related and irreversible brain disorder that occurs
gradually and results in memory loss, behavior and personality changes, and a decline in thinking
abilities. AD is the most common dementia of old age, representing approximately two-thirds of
cases.

Frontotemporal dementia (FTD) is a dementia syndrome characterized histopathologically by the
formation of microvacuoles, gliosis (i.e., excess of neuroglial cells) with or without inclusion
bodies (Pick's bodies) and swollen neurons.

Positron emission tomography (PET) is a minimally invasive diagnostic imaging procedure used to
evaluate glucose metabolism in normal tissue as well as in diseases such as cancer, ischemic heart
disease, and certain neurological disorders.

Functional neuroimaging, such as FDG-PET, has been proposed for the evaluation of elderly
patients who may have early dementia and for whom the differential diagnosis includes one or more
kinds of neurodegenerative diseases. FDG-PET may be able to diagnose AD by identifying
anatomical patterns of brain hypometabolism, which typically occur bilaterally in the temporal and
parietal lobes. FDG-PET scans typical of AD may be differentiated by visual inspection from scans
suggestive of vascular dementia (asymmetric and focal abnormalities) and scans indicative of FTD
(marked hypometabolism of frontal or temporal lobes with sparing of parietal lobes). An accurate
distinction, for instance between AD and FTD may prove helpful in patient management given the
variation in the course of these two diseases.

**Codes: CPT HCPCS**
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**VII. Procedures**

None

**VIII. References/Citations**

   

**IX. Forms/Appendices**

**X. Responsibility**

**XI. Approval Body/Approval Signatures**