WELLMED Doctors helping patients for more than 25 years	Effective Date: 10/27/23	Revision Date(s):	
Department: PHARMACY	MMC Review/ Approval Date(s): 10/25/23	Page(s): 19	
Policy Number: 070.000			
Title: Coverage Determination Policy for Leqembi (Lecanemab-irmb)			

Regions:	🛛 Texas	🗆 Florida	🛛 Indiana	New Jersey	🛛 New Mexico
Impacted A	reas:				
🛛 Networ	k Management	/Provider Services	🛛 Utilization Ma	nagement	
	r services		🗌 Case managem	nent	
Quality	Management		Disease manage	ement	
Credent	tialing		🖂 Claims		
🗆 IT			🗌 Human resour	ces	
□ Adminis	stration		Finance		
🗌 Complia	ance/delegatior	า	🛛 Pharmacy		

Available LCD/NCD/LCA: Alzheimer's Disease: NCD 200.3	Available LCD/NCD/LCA	Monoclonal Antibodies Directed Against Amyloid for the Treatment of	
Alzheimer 3 Disease. NCD 200.5	Available ECD/INCD/ECA:	Alzheimer's Disease: NCD 200.3	

#### Disclaimer:

WellMed Coverage Determination Policies are developed as needed, are regularly reviewed and updated, and are subject to change. They represent a portion of the resources used to support WellMed coverage decision making. WellMed may modify these Policy Guidelines at any time. Medicare source materials used to develop these guidelines include, but are not limited to, CMS National Coverage Determinations (NCDs), Local Coverage Determinations (LCDs), Medicare Benefit Policy Manual, Medicare Claims Processing Manual, Medicare Program Integrity Manual, Medicare Managed Care Manual, etc. The information presented in the WellMed Coverage Determination Policies is believed to be accurate and current as of the date of publication, and is provided on an "AS IS" basis. Where there is a conflict between this document and Medicare source materials, the Medicare source materials will apply.



## Title: Coverage Determination Policy for Leqembi (Lecanemab-irmb)

Table of Contents	Page	Coverage Policy Number: 070.000
Coverage Determination (Initial/New Requests)	3	Line of Business: Medicare Part B
Coverage Determination (Renewal/Continuation of Therapy Requests)	5	Policy Type: Prior Authorization
FDA Approved Dose and Indication	6	
General Background	7	
Clinical Evidence	13	
HCPCS Code	15	
Acronyms	16	
References	17	
Policy History/Revision Information	19	

### **Coverage Determination:**

#### Initial/New Requests

# NOTE: Leqembi (lecanemab-irmb) is unproven and not medically necessary for any indication other than mild cognitive impairment due to Alzheimer's disease and mild Alzheimer's disease dementia.

**Leqembi (lecanemab-irmb)** may be covered for the treatment of **Alzheimer's disease (AD)** in patients who meet **ALL** of the following criteria:

- 1. Diagnosis of **ONE** of the following based on National Institute on Aging and the Alzheimer's Association (NIA-AA) criteria:
  - A. Mild cognitive impairment (MCI) due to Alzheimer's disease
  - B. Mild dementia stage of Alzheimer's disease
- 2. Submission of medical records (e.g., chart notes, laboratory values) documenting **ALL** of the following:
  - A. Global Clinical Dementia Rating (CDR) score of 0.5 or 1.0
  - B. CDR Memory Box score of 0.5 or greater
  - C. **ONE** of the following:
    - I. Mini-Mental State Examination (MMSE) score of 22 or greater
    - II. Saint Louis University Mental Status (SLUMS) score of 17 or greater
    - III. Montreal Cognitive Assessment (MoCA) score of 17 or greater
- 3. Submission of medical records (e.g., chart notes, laboratory values) documenting the presence of beta-amyloid protein deposition, as evidenced by **ONE** of the following:
  - A. Positive amyloid positron emission tomography (PET) scan
  - B. **BOTH** of the following:
    - I. Attestation that the patient does not have access to amyloid PET scanning
    - II. Cerebrospinal fluid (CSF) biomarker testing documents abnormalities suggestive of beta-amyloid accumulation in the brain (e.g., Aβ42: 40 ratio, p-tau/Aβ42)
- 4. Other differential diagnoses [e.g., dementia with Lewy bodies (DLB), frontotemporal dementia (FTD), vascular dementia, pseudodementia due to mood disorder, vitamin B12 deficiency, encephalopathy, etc.] have been ruled out
- 5. **ONE** of the following:
  - A. Patient is not currently taking an anticoagulant (e.g., warfarin, dabigatran); OR
  - B. **BOTH** of the following:
    - I. Patient is currently taking an anticoagulant (e.g., warfarin, dabigatran)
    - II. Counseling has been provided that the combined use of Leqembi with anticoagulant drugs may increase the risk of cerebral macrohemorrhage and prescriber attests that the patient has shared in decision-making to initiate Leqembi therapy

- 6. Patient has no history of intracerebral hemorrhage [e.g., transient ischemic attack (TIA), stroke] within the previous year prior to initiating treatment
- 7. Counseling has been provided on the risk of amyloid-related imaging abnormalities; ARIA-E and ARIA-H (and patient is aware to monitor for headache, dizziness, visual disturbances, nausea, and vomiting)
- Leqembi (lecanemab) has a Black Box Warning in its FDA label that states patients who are homozygous for the apolipoprotein E ε4 (ApoE ε4) allele have a higher incidence of ARIA: BOTH of the following:
  - A. Counseling has been provided on how testing for ApoE  $\epsilon$  4 status informs the risk of developing ARIA when deciding to initiate treatment with Leqembi; and
  - B. Testing for ApoE  $\epsilon$ 4 status has been offered to the patient and prescriber attests that the patient has shared in decision-making to initiate Leqembi therapy
- 9. A baseline brain magnetic resonance imaging (MRI) has been completed within 12 months prior to initiating treatment
- 10. Leqembi is not used in combination with other A $\beta$  monoclonal antibodies (mAbs) for Alzheimer's Disease (e.g., Aduhelm)
- 11. Prescribed by a neurologist, geriatric psychiatrist, or geriatrician who specializes in treating dementia
- 12. Prescriber attests that the prescriber's site currently participates in a CMS-facilitated registry that collects information on treatment with monoclonal antibodies directed against amyloid for the treatment of Alzheimer's disease or the member is enrolled in a CMS-approved study. **See all study specifications and requirements in CMS** NCD 200.3 . (See link to CMS press release on Registry for New Alzheimer's Drugs for informational purposes only: https://www.cms.gov/newsroom/press-releases/statement-broader-medicare-coverage-leqembi-available-following-fda-traditional-approval
- 13. Leqembi dosing is in accordance with the United States Food and Drug Administration approved labeling
- 14. Initial authorization will be for no more than 6 months

### **Renewal/Continuation of Therapy Requests**

For continuation of therapy, **ALL** of the following must be met:

- 1. Patient continues to have a diagnosis of **EITHER**:
  - A. Mild cognitive impairment (MCI) due to Alzheimer's disease; OR
  - B. Mild dementia stage of Alzheimer's disease
- 2. Submission of current medical records (e.g., chart notes, laboratory values) documenting that the patient continues to meet **ALL** of the following (updated assessments must be measured no earlier than 4 weeks prior to a continuation request)
  - A. Global Clinical Dementia Rating (CDR) score of 0.5 or 1.0
  - B. CDR Memory Box score of 0.5 or greater
  - C. **ONE** of the following:
    - I. Mini-Mental State Examination (MMSE) score of 22 or greater
    - II. Saint Louis University Mental Status (SLUMS) score of 17 or greater
    - III. Montreal Cognitive Assessment (MoCA) score of 17 or greater
- 3. **BOTH** of the following:
  - A. Submission of medical records (e.g., chart notes) confirming follow-up brain magnetic resonance imaging (MRI) has been completed after the initiation of therapy and prior to the 5<sup>th</sup>, 7<sup>th</sup> and 14<sup>th</sup> infusion treatments
  - B. **ONE** of the following:
    - I. ARIA has not been observed on MRI; OR
    - II. ALL of the following:
      - a. ARIA has been observed on MRI
      - b. Prescriber attests that continuation of therapy with Leqembi is appropriate based on the severity of the patient's clinical symptoms
      - c. **ONE** of the following:
        - i. Follow-up MRI demonstrates radiographic resolution and/or stabilization; **OR**
        - ii. Prescriber attests that continuation of therapy with Leqembi is appropriate based on the radiographic severity of ARIA
- 4. Leqembi is **NOT** used in combination with other Aβ monoclonal antibodies (mAbs) for Alzheimer's Disease (e.g., Aduhelm)
- 5. Prescribed by a neurologist, geriatric psychiatrist, or geriatrician who specializes in treating dementia
- 6. Leqembi dosing is in accordance with the United States Food and Drug Administration approved labeling
- 7. Reauthorization is for no more than 6 months

## FDA Approved Dose and Indication

FDA Approved Indication	Approved Dosing
<b>Alzheimer's disease</b> ; Mild cognitive	10 mg/kg IV over 1 hour once every 2
impairment or mild dementia stage of	weeks
disease	(Use patient's actual body weight)

## **General Background**

Alzheimer's disease (AD) is the most common cause of dementia and accounts for an estimated 60% to 80% of cases. After AD, the most common neurodegenerative dementias are Lewy body disease, characterized by chronic rapid eye movement (REM) sleep behavior disorder, early visuospatial impairment, and parkinsonism; and Frontotemporal dementia, characterized by a behavioral variant or less often, a language impairment variant.

AD is characterized by deposition of amyloid-beta A $\beta$  plaques and neurofibrillary tangles (comprised of abnormal tau protein) in the brain, accompanied by synaptic dysfunction and neurodegeneration. The deposition of A $\beta$  (as amyloid plaques) generally begins decades before any symptoms of AD are observed. More specifically, A $\beta$  deposition is followed sequentially by markers of neurodegeneration, accumulation of tau pathology, and brain volume loss. This presymptomatic phase of AD will precede the emergence of AD symptoms 10 to 20 years prior.

Tau is the microtubule associated protein (MAP) of a normal mature neuron. Tau is a phosphoprotein that promotes the assembly of tubulin into microtubules and stabilization of their structure. In AD (and certain other related neurodegenerative diseases, called tauopathies), tau protein is abnormally hyperphosphorylated and aggregated into bundles of filaments. In AD, this tau pathology is seen as intraneuronal neurofibrillary tangles of paired helical filaments sometimes admixed with straight filaments. Aggregates of abnormally hyperphosphorylated filaments are also seen in dystrophic neurites surrounding the  $A\beta$  plaque core, and in the neuropil as neuropil threads.

There are 2 ways to detect abnormal A $\beta$ , either directly via PET imaging using tracers or indirectly by measuring the levels of the long form of A $\beta$  in the CSF. P-tau and t-tau can also be detected using CSF and are used as biomarkers to detect the emergence of AD in patients with MCI.

#### Age of AD onset:

- Typical AD: AD is characteristically a disease of older age. The incidence and prevalence of AD increase exponentially with age, essentially doubling in prevalence every 5 years after the age of 65 years.
- Early-onset dementia: Although less common, early-onset dementia occurs in patients < 65 years of age. These patients often present with symptoms somewhat atypical for this disease, such as language, visual, or mood-behavioral changes rather than predominant memory loss. A study from the United Kingdom estimated that the incidence of dementia in individuals 30 to 65 years of age was approximately 54 per 100,000 person-years. The most common cause of dementia in these patients was AD (34%), followed by vascular dementia (18%), frontotemporal dementia (12%), dementia with Lewy bodies (7%), and alcohol-related dementia (10%).</li>
- Inherited forms of AD: These forms of AD are rare (< 1% of all AD cases) and routinely present before 65 years of age, frequently in the fifth decade or earlier. Inherited forms of AD typically exhibit an autosomal-dominant inheritance pattern related to mutations</p>

in genes that alter A $\beta$  protein production or metabolism, including amyloid precursor protein (APP), presenilin-1 (PSEN1), and presenilin-2 (PSEN2).

 AD associated with Down syndrome: Patients with Down syndrome have an additional gene dose of APP due to trisomy of chromosome 21 and inevitably develop AD pathology. Symptoms tend to emerge at an earlier age, i.e., 10 to 20 years earlier than the general population with AD.

#### Risk factors for AD:

- Aging is an important risk factor for dementia. AD affects 5% to 10% of people > 65 years of age, and 50% of those ≥ 85 years of age.
- Non-modifiable risk factors for AD include female gender, Black race, Hispanic ethnicity, and genetic factors such as presence of the APOE gene.
- Modifiable risk factors for all-cause dementia include hypertension, diabetes, diet, and limited cognitive, physical, and social activities.

While the genetic basis for early-onset AD is much better understood, the genetic basis of lateonset AD is considered far more complex, with susceptibility conferred by a variety of more common but less penetrant genetic factors likely interacting with environmental and epigenetic influences. To date, the most firmly established genetic risk factor for late-onset disease is APOE:

- The APOE gene is located on chromosome 19 and exists in 3 alleles: epsilon 2, 3, and 4. The APOE epsilon 4 (ε4) allele has been confirmed to be an important risk factor for AD in many clinical trials.
- Factors that may influence the impact of APOE ε4 on AD risk include female gender, African/African-American race (although there are conflicting data), vascular risk factors (e.g., smoking, diabetes, hypertension, and hypercholesterolemia), and modifier genes/environment.
- Genetic testing is available for the known causative genes in early-onset AD but has not been widely adopted, likely in part because of the current lack of highly effective preventive or therapeutic strategies.

The symptoms at early stage AD are less pronounced than in later stages of AD, and therefore require measures that are different from those used in later stages.

The Clinical Dementia Rating-Sum of Boxes (CDR-SB) is an integrated scale that assesses both daily function and cognitive effects and was shown to be sufficiently sensitive and specific to detect change over time in early symptomatic AD patients. The scale integrates assessments from 3 domains of cognition (memory, orientation, judgment/problem-solving) and 3 domains of function (community affairs, home/hobbies, personal care). CDR-SB scores range from 0-18, with higher scores indicating greater disease severity. A minimal clinically important difference in CDR-SB has not been clearly defined but has been estimated to be 1-2 points. A CDR-SB score ranging from 0.5 - 4.0 has been reported to correspond to a CDR-G score of 0.5. A CDR-SB score ranging from 4.5-9.0 has been reported to correspond to a CDR-G score of 1.

CDR-SB Score	Disease Severity	
0	Normal	
0.5 - 4.0	Suggests questionable cognitive impairment to very mild dementia	
0.5 - 2.5	Suggests questionable cognitive impairment	
3.0 - 4.0	Suggests very mild dementia	
4.5 - 9.0	Suggests mild dementia	
9.5 - 15.5	Suggests moderate dementia	
16.0 - 18.0	Suggests severe dementia	

The Mini-Mental State Exam (MMSE) is a widely used performance-based test of global cognitive status. The MMSE is a measure of cognition that includes 11 tasks relating to topics of word recall, attention and calculation, language ability, and visuospatial function. The scale ranges from 0 to 30 with a lower score reflecting greater cognitive impairment. It has several known limitations impacting sensitivity to change, particularly in earlier disease stages: substantial ceiling effects, sensitivity to practice effects, scores are impacted by patients' educational achievement, and learning effects are observed. The minimal clinically important difference of the MMSE in AD is estimated to be 1-3 points, and in early AD to be 1-2 points.

MMSE Score	Disease Severity
25 - 30	Normal to questionable cognitive impairment
19 - 24	Suggests mild dementia
10 - 18	Suggests moderate dementia
0 - 9	Suggests severe dementia

The Alzheimer's Disease Assessment Scale – Cognitive Subscale (13-Item version) (ADAS-Cog13) comprises both cognitive tasks and clinical ratings of cognitive performance. The scale items capture word recall, ability to follow commands, the ability to correctly copy or draw an image, naming, the ability to interact with everyday objects, orientation, word recognition, memory, comprehension of spoken language, word-finding, and language ability, with a measure for delayed word recall and concentration/distractibility. The total score ranges from 0 to 85 with an increase in score over time indicates increasing cognitive impairment. The minimal clinically important difference of the ADAS-COG 13 in early AD is estimated to be 3 points.

The Montreal Cognitive Assessment (MoCA) is a widely used screening test specifically designed to detect more subtle cognitive deficits that characterize mild cognitive impairment. Like the MMSE, the MoCA is scored on a 30-point scale, with items that assess delayed word recall, visuospatial/executive function, language, attention/concentration, and orientation. Studies examining head-to-head performance of patients on the MMSE and MoCA have shown that the MoCA is more difficult; MoCA scores are consistently lower than those obtained on the MMSE. The MoCA appears to be more sensitive than the MMSE for detecting MCI, though perhaps slightly less specific. A minimum clinically important difference of the MoCA in AD has not been described.

Assessment Scale	Minimal Clinical Important Difference
Clinical Dementia Rating-Sum of Boxes (CDR-SB)	1-2 points
Mini-Mental State Exam (MMSE)	1-3 points
Alzheimer's Disease Assessment Scale – Cognitive Subscale (13-Item version) (ADAS-Cog13)	3 points

The stages of AD dementia can be defined by the MMSE and MoCA scores below:

- Mild dementia (MMSE 19 to 26; MoCA 12 to 16)
- Moderate dementia (MMSE 10 to 18; MoCA 4 to 11)
- Severe dementia (MMSE < 10; MoCA < 4)</li>

The National Institute on Aging and the Alzheimer's Association (NIA-AA) research framework committee created a numeric clinical staging scheme (table below) applicable for diagnosing those in the Alzheimer's continuum. This staging scheme reflects the sequential evolution of AD from an initial stage characterized by the appearance of abnormal AD biomarkers in asymptomatic individuals. As biomarker abnormalities progress, the earliest subtle symptoms become detectable.

Stage	Numeric Clinical Staging—Applicable Only to Individuals in the Alzheimer's Continuum
Stage 1	<ul> <li>Performance within expected range on objective cognitive tests. Cognitive test performance may be compared to normative data of the investigator's choice, with or without adjustment (the choice of the investigators) for age, sex, education, etc. *</li> <li>Does not report recent decline in cognition or new onset of neurobehavioral symptoms of concern.</li> <li>No evidence of recent cognitive decline or new neurobehavioral symptoms by report of an observer (e.g., study partner) or by longitudinal</li> </ul>
Stage 2	<ul> <li>Normal performance within expected range on objective cognitive tests.</li> <li>Transitional cognitive decline: Decline in previous level of cognitive function, which may involve any cognitive domain(s) (i.e., not exclusively memory).</li> <li>May be documented through subjective report of cognitive decline that is of concern to the participant.</li> <li>Represents a change from individual baseline within past 1–3 years, and persistent for at least 6 months.</li> <li>May be documented by evidence of subtle decline on longitudinal cognitive testing but not required.</li> <li>Or may be documented by both subjective report of decline and objective evidence on longitudinal testing.</li> <li>Although cognition is the core feature, mild neurobehavioral changes—for example, changes in mood, anxiety, or motivation—may coexist. In some individuals, the primary compliant may be neurobehavioral rather than cognitive. Neurobehavioral symptoms should have a clearly defined recent on set, which persists and cannot be explained by life events<sup>+</sup></li> <li>No functional impact on daily life activities.</li> </ul>
Stage 3	<ul> <li>Performance in the impaired/abnormal range on objective cognitive tests.</li> <li>Evidence of decline from baseline, documented by the individual's report or by observer (e.g., study partner) report or by change on longitudinal cognitive testing or neurobehavioral behavioral assessments.</li> <li>May be characterized by cognitive presentations that are not primarily amnestic<sup>‡</sup></li> <li>Performs daily life activities independently, but cognitive difficulty may result in detectable but mild functional impact on the more complex activities of daily life, that is, may take more time or be less efficient but still can complete, either self-reported or corroborated by a study partner.</li> </ul>
Stage 4	<ul> <li>Mild dementia.</li> <li>Substantial progressive cognitive impairment affecting several domains, and/or neurobehavioral disturbance. Documented by the individual's</li> </ul>

ing mainly
occasional
s. Extensive
tivities. No
n daily life
ges. Clinical
ily life with
ing me with
native data
ice of the
ral changes
t.
esentations

Despite the existence of several FDA-approved therapies for AD, there is an unmet medical need for treatments that are intended to address the biological basis of AD. Currently approved treatments do not target the underlying pathology of AD. Cholinesterase inhibitors (donepezil, galantamine, and rivastigmine) and the NMDA-antagonist, memantine, are the only FDAapproved and guideline-recommended treatments for AD dementia. The majority of patients with newly diagnosed AD should be offered a trial of a cholinesterase inhibitor for symptomatic treatment of cognition and global functioning. However, the degree of expected benefit is modest, and therapy should only be continued in patients who appear to be benefiting.

Leqembi (lecanemab-irmb) is a humanized immunoglobulin gamma 1 (lgG1) monoclonal antibody directed against aggregated soluble and insoluble forms of amyloid beta. The accumulation of amyloid beta plaques in the brain is a defining pathophysiological feature of Alzheimer's disease.

## **Clinical Evidence**

Multiple investigational anti-A $\beta$  antibodies have been developed with the goal of either reducing production of A $\beta$  or lowering levels of aggregated A $\beta$  present in the brain, the latter of which has been the most pursued approach. Many of these investigational drugs have failed to demonstrate efficacy and/or safety. Some explanations for the failures of previous anti-A $\beta$  antibodies include the following:

- Inclusion of patients in clinical trials without evidence of Aβ pathology
- Unknown or no target engagement prior to initiation of Phase 3 study (i.e., poor selectivity of drug for neurotoxic Aβ)
- Lack of robust and sustained inhibition of soluble Aβ oligomers
- Use of subtherapeutic doses (possibly due to decreased brain penetration)
- Inclusion of patients at later stages of AD dementia, when significant irreversible neurodegeneration has already occurred

FDA approval for lecanemab was based on Study 201 an 18-month, Phase 2b, double-blind, placebo controlled, multicenter, randomized control trial that evaluated the safety and efficacy of lecanemab. The study aimed to establish the effective dose 90% (ED90), defined as the simplest dose that achieves  $\geq$  90% of the maximum treatment effect. The primary endpoint was Bayesian analysis of 12-month clinical change on the Alzheimer's Disease Composite Score (ADCOMS) for the ED90 dose, which required an 80% probability of  $\geq$  25% clinical reduction in decline versus placebo. Study 201 enrolled 854 were treated to lecanemab, 609 or placebo, 245. Of the total number of patients randomized, 71.4% were ApoE  $\epsilon$ 4 carriers and 28.6% were ApoE  $\epsilon$ 4 carriers to the 10 mg/kg every two weeks dose arm. ApoE  $\epsilon$ 4 carriers who had been receiving lecanemab 10 mg/kg every two weeks for 6 months or less were discontinued from study drug. The primary analysis conducted at Month 12 of treatment indicated that the 10 mg/kg IV biweekly dose (the effective dose) had a 64% probability to be better than placebo by 25% on ADCOMS at 12 months, missing the prespecified 80% probability threshold for the primary outcome.

The results for the Bayesian analysis for reduction of clinical decline at 18 months vs placebo for 10 mg/kg biweekly on ADCOMS (-27%, with 97.7% probability to be superior to placebo), CDR-SB (33%, with 96.4% probability to be superior to placebo), and ADASCog14 (56%, with a 98.8% probability to be superior to placebo) were similar to the results from the corresponding conventional analyses for clinical measures when comparing mean change from baseline and lease squares (LS) mean data.

The CLARITY AD Phase 3 study was conducted to evaluate the efficacy of lecanemab in participants with early Alzheimer's disease (EAD) by determining the superiority of lecanemab compared with placebo on the change from baseline in the Clinical Dementia Rating-Sum of Boxes (CDR-SB) at 18 months of treatment in the Core Study. This study will also evaluate the long-term safety and tolerability of lecanemab in participants with EAD in the Extension Phase and whether the long-term effects of lecanemab as measured by the CDR-SB at the end of the Core Study is maintained over time in the Extension Phase. CLARITY AD was an 18-month, multicenter, double-blind, phase 3 trial involving persons 50 to 90 years of age with early Alzheimer's disease (mild cognitive impairment or mild dementia due to Alzheimer's disease) with evidence of amyloid on positron-emission tomography (PET) or by cerebrospinal fluid testing. Participants were randomly assigned in a 1:1 ratio to receive intravenous lecanemab (10 mg per kilogram of body weight every 2 weeks) or placebo. The primary end point was the change from baseline at 18 months in the score on the Clinical Dementia Rating–Sum of Boxes (CDR-SB; range, 0 to 18, with higher scores indicating greater impairment). Key secondary end points were the change in amyloid burden on PET, the score on the 14-item cognitive subscale of the Alzheimer's Disease Assessment Scale (ADAS-cog14; range, 0 to 90; higher scores indicate greater impairment), the Alzheimer's Disease Composite Score (ADCOMS; range, 0 to 1.97; higher scores indicate greater impairment), and the score on the Alzheimer's Disease Cooperative Study-Activities of Daily Living Scale for Mild Cognitive Impairment (ADCSMCI-ADL; range, 0 to 53; lower scores indicate greater impairment). A total of 1795 participants were enrolled, with 898 assigned to receive lecanemab and 897 to receive placebo. The mean CDR-SB score at baseline was approximately 3.2 in both groups. The adjusted least-squares mean change from baseline at 18 months was 1.21 with lecanemab and 1.66 with placebo (difference, -0.45; 95% confidence interval [CI], -0.67 to -0.23; p < 0.001). Furthermore, a slope analysis demonstrated that lecanemab took 5.5 to 6 months more time to achieve the same CDR-SB as placebo at 18 months, indicating a 5.5 to 6 month slowing of progression. Aß plaque reduction was a secondary endpoint and was studied in a subset of patients (n = 698). The adjusted mean change from baseline at 18 months was -55.48 centiloids in the lecanemab group vs 3.64 centiloids in the placebo group (adjusted mean difference, -59.12 centiloids; 95% Cl, -62.64 to -55.60; p < 0.001). Lecanemab resulted in infusion-related reactions in 26.4% of the participants and amyloidrelated imaging abnormalities with edema or effusions in 12.6%. The incidence of ARIA-E with lecanemab was 12.5% vs 1.7% with placebo (symptomatic ARIA-E: 2.8% vs 0% with placebo). The incidence of ARIA-H was 17.0% vs 8.7% with placebo (symptomatic ARIA-H: 0.7% vs 0.2% in placebo group). In a sub study involving 698 participants, there were greater reductions in brain amyloid burden with lecanemab than with placebo (difference, -59.1 centiloids; 95% CI, -62.6 to -55.6). Other mean differences between the two groups in the change from baseline favoring lecanemab were as follows: for the ADAS-cog14 score, -1.44 (95% CI, -2.27 to -0.61; p < 0.001); for the ADCOMS, -0.050 (95% CI, -0.074 to -0.027; p < 0.001); and for the ADCS-MCIADL score, 2.0 (95% CI, 1.2 to 2.8; p < 0.001).

## **HCPCS Code**

HCPCS Code	J0174: lecanemab-irmb, 1mg
Available Dosage Form	Intravenous Solution: 100 MG/1 ML
Route of Administration	Intravenous

#### Acronyms

Alzheimer's disease = AD Early Alzheimer's disease = EAD Amyloid related imaging abnormalities = ARIA ARIA with edema = ARIA-E ARIA with hemosiderin deposition = ARIA-H Apolipoprotein E e4 = ApoE e4 Clinical Dementia Rating = CDR Mini-Mental State Examination = MMSE Amyloid-beta =  $A\beta$ Alzheimer's Disease Composite Score = ADCOMS Mild cognitive impairment = MCI National Institute on Aging and the Alzheimer's Association = NIA-AA Saint Louis University Mental Status = SLUMS Montreal Cognitive Assessment = MoCA Dementia with Lewy bodies = DLB Frontotemporal dementia = FTD Monoclonal antibodies = mAbs Microtubule associated protein = MAP Montreal Cognitive Assessment = MoCA Standardized uptake value ratio = SUVR

#### References

- 1. Leqembi (Lecanemab-irmb) Intravenous Solution, [prescribing information]. Eisai, Inc. Nutley, NJ. July 2023.
- 2. Leqembi in: MerativeTM Micromedex<sup>®</sup> DRUGDEX<sup>®</sup> (electronic version). Merative, Ann Arbor, Michigan, USA. Available at: https://www.micromedexsolutions.com/ (cited: 9/13/23)
- 3. National Coverage Determination (NCD) 200.3- Monoclonal Antibodies Directed Against Amyloid for the Treatment of Alzheimer's Disease (AD). Accessed 9/13/2023
- 4. Alzheimer's Association. 2022 Alzheimer's disease facts and figures. https://www.alz.org/media/documents/alzheimersfacts-and-figures.pdf. Accessed 9/13/2023
- 5. Arvanitakis Z, Shah RC, Bennett DA. Diagnosis and management of dementia: a review. JAMA. 2019;322(16):1589-1599.
- 6. Hyman BT, Phelps CH, Beach TG, et al. National Institute on Aging-Alzheimer's Association guidelines for the neuropathic assessment of Alzheimer's disease. Alzheimer's Dement. 2012;8(1):1-13.
- 7. Iqbal K, Liu F, Gong CX, et al. Tau in Alzheimer's Disease and related tauopathies. Curr Alzheimer Res. 2010;7(8): 656–664.
- 8. McKhann GM, Knopman DS, Chertkow H, et al. The diagnosis of dementia due to Alzheimer's disease: recommendations from the National Institute on Aging-Alzheimer's Association workgroups on diagnostic guidelines for Alzheimer's disease. Alzheimers Dement. 2011;7(3):263-269.
- 9. Clinicaltrials.gov Web site. https://www.clinicaltrials.gov/ct2/show/NCT01767311. Accessed 9/13/23. {Study 1 in Leqembi Prescribing Information}
- 10. Clinicaltrials.gov Web site. https://clinicaltrials.gov/ct2/show/NCT03887455. Accessed 9/13/23 { Study 2 in Leqembi Prescribing Information}
- 11. Van Dyck CH, Swanson CJ, Aisen P, et al. Lecanemab in Early Alzheimer's Disease. *N Engl J Med*. 2023;388(1):9-21. doi:10.1056/NEJMoa2212948
- 12. Wolk DA, Dickerson BC. Clinical features and diagnosis of Alzheimer disease. UpToDate Web site. Updated October 8, 2021. http://www.uptodate.com. Accessed 9/11/2023
- 13. Keene CD, Montine TJ, Kuller LH. Epidemiology, pathology, and pathogenesis of Alzheimer's disease. UpToDate Web site. Updated August 23, 2022. http://www.uptodate.com. Accessed 9/11/2023
- 14. Sherva R, Kowall NW. Genetics of Alzheimer disease. UpToDate Web site. Updated May 19, 2022. http://www.uptodate.com. Accessed 9/11/2023
- 15. O'Bryant SE, Lacritz LH, Hall LH, et al. Validation of the new interpretive guidelines for the clinical dementia rating scale sum of boxes score in the National Alzheimer's Coordinating Center database. Arch Neurol. 2010;67(6):746-749

- 16. Press D, Alexander A. Cholinesterase inhibitors in the treatment of Alzheimer's disease. UpToDate Web site. Updated June 21, 2021. http://www.uptodate.com. Accessed 9/11/2023
- 17. Atri A. The Alzheimer's disease clinical spectrum diagnosis and management. Med Clin N Am. 2019;103:263-293.
- 18. Petersen RC, Lopez O, Armstrong MJ, et al. Practice guideline update: mild cognitive impairment. Neurology. 2018;90(3):126-135.
- 19. Tolar M, Abushakra S, Sabbagh M. The path forward in Alzheimer's disease therapeutics: Reevaluating the amyloid cascade hypothesis. Alzheimers Dement. 2020;16(11):1553-1560.
- 20. Albert MS, DeKosky ST, Dickson D, et al. The diagnosis of mild cognitive impairment due to Alzheimer's disease: recommendations from the National Institute on Aging-Alzheimer's Association workgroups on diagnostic guidelines for Alzheimer's disease. Alzheimers Dement. 2011;7(3):270-279.
- 21. O'Bryant SE, Waring SC, Cullum CM, et al. Staging Dementia Using Clinical Dementia Rating Scale Sum of Boxes Scores: A Texas Alzheimer's Research Consortium Study. Arch Neurol. 2008;65(8):1091-1095.
- 22. Folstein MF, Folstein SE, McHugh PR. "Mini-mental state". A practical method for grading the cognitive state of patients for the clinician. J Psychiatr Res. 1975;12(3):189-198
- 23. Ref # 40: Clifford R. Jack Jr., et al: NIA-AA Research Framework: Toward a biological definition of Alzheimer's disease. Alzheimers Dement. 2018 April; 14(4): 535–562. doi:10.1016/j.jalz.2018.02.018
- 24. Andrews JS, et al: Disease severity and minimal clinically important differences in clinical outcome assessments for Alzheimer's disease clinical trials. Alzheimer's & Dementia: Translational Research & Clinical Interventions 5 (2019) 354- 363.
- 25. Schrag A, Schott JM; Alzheimer's Disease Neuroimaging Initiative. What is the clinically relevant change on the ADAS-Cog? J Neurol Neurosurg Psychiatry. 2012 Feb;83(2):171-3
- 26. Mendez MF. Mental status scales to evaluate cognition. UpToDate Website. Updated April 14, 2023. http://www.uptodate.com. Accessed 9/11/2023