Policy Name: Genetic Testing for Alzheimer Disease
Effective Date: 7/15/2019

Important Information – Please Read Before Using This Policy

These services may or may not be covered by all Medica plans. Please refer to the member’s plan document for specific coverage information. If there is a difference between this general information and the member’s plan document, the member’s plan document will be used to determine coverage. With respect to Medicare and Minnesota Health Care Programs, this policy will apply unless those programs require different coverage. Members may contact Medica Customer Service at the phone number listed on their member identification card to discuss their benefits more specifically. Providers with questions about this Medica coverage policy may call the Medica Provider Service Center toll-free at 1-800-458-5512.

Medica coverage policies are not medical advice. Members should consult with appropriate health care providers to obtain needed medical advice, care and treatment.

Coverage Policy

Genetic testing for Alzheimer Disease is investigatory and unproved, and therefore NOT COVERED. There is insufficient reliable evidence in the form of high quality peer-reviewed medical literature to establish the effects on health care outcomes.

Description

Genetic testing has been proposed as a means to diagnose or predict susceptibility to Alzheimer disease (AD). AD, the most common cause of dementia, is a progressive, fatal neurodegenerative disorder characterized by deficits in memory and cognition. AD is typically classified based on age at onset as either late-onset AD (LOAD) or early-onset familial AD (EOFAD). The current reference standard for diagnosis of AD is the presence of specific pathological changes in brain tissue (amyloid plaques and neurofibrillary tangles), which cannot be detected until autopsy. The clinical diagnosis of AD, which correlates with subsequent autopsy findings in approximately 80% to 90% of cases, is based on the presence of slowly progressive dementia and gross cerebral atrophy on neuroimaging. It also involves the exclusion of other causes of dementia using laboratory studies. The treatment for AD, regardless of age at onset or family history, is primarily supportive, although recently developed medications may provide a cognitive benefit to some patients.

About 25% of all AD is familial, of which approximately 95% is late-onset, beginning after 60 to 65 years of age. LOAD, the most common form of AD, is a slowly progressive dementia that demonstrates diffuse cerebral atrophy on imaging studies. Variants in the apolipoprotein E (APOE) gene have been associated with an altered risk of AD in most populations. However, the etiology of LOAD, also known as AD2, is complex and involves both genetic and environmental factors.

The remaining 5% of familial AD is early-onset disease. EOFAD refers to families in which multiple cases of AD occur (e.g., usually multiple affected persons in more than one generation) and in which the age of onset is consistently before age 60 to 65 and often before age 55. Three clinically indistinguishable subtypes of EOFAD have been identified, based on the underlying genetic mechanism: Alzheimer disease type 1 (AD1), caused by mutations in the amyloid precursor protein gene (APP); Alzheimer disease type 3 (AD3), caused by mutations in the presenilin 1 gene (PSEN1); and Alzheimer disease type 4 (AD4), caused by mutations in the presenilin 2 gene (PSEN2). Clinical genetic testing is available for both LOAD and EOFAD and is under investigation as an aid in
diagnosis in patients with symptoms suggestive of AD and as a technique for risk assessment in asymptomatic patients with a family history of AD.

**FDA Approval**
Genetic tests are regulated under the Clinical Laboratory Improvement Amendments (CLIA) Act of 1988. Premarket approval from the FDA is not required as long as the assay is performed in a laboratory facility that observes CLIA regulations. Clinical testing for both late- and early-onset AD is available through Athena Diagnostics Inc. (Worcester, MA) and Signature Genomics (Spokane, WA), both of which have a current CLIA license.

**Prior Authorization**
Prior authorization is not applicable. Claims for this service are subject to retrospective review and denial of coverage, as investigative services are not eligible for reimbursement.

**Coding Considerations**
Use the current applicable CPT/HCPCS code(s). The following codes are included below for informational purposes only, and are subject to change without notice. Inclusion or exclusion of a code does not constitute or imply member coverage or provider reimbursement.

**CPT Codes:**
- 81405 - PSEN1 (presenilin 1) (eg, Alzheimer disease), full gene sequence
- 81406 - PSEN2 (presenilin 2 [Alzheimer disease 4]) (eg, Alzheimer disease), full gene sequence

**HCPCS Codes:**
- S3852 - DNA analysis for APOE epsilon 4 allele for susceptibility to Alzheimer's disease

Original Effective Date: 7/1/2010

Re-Review Date(s): 3/26/2013
5/18/2016
5/15/2019
2/10/2020 – administrative update; format