Clinical Policy: Genetic Testing Hearing Loss

Reference Number: CP.MP.223
Date of Last Revision: 02/22

Coding Implications
Revision Log

See Important Reminder at the end of this policy for important regulatory and legal information.

Description

Hereditary hearing loss can be classified as syndromic or nonsyndromic. Syndromic hearing loss refers to hearing loss associated with other medical or physical findings, including visible abnormalities of the external ear. Because syndromic hearing loss occurs as part of a syndrome of multiple clinical manifestations, it is often recognized more readily as hereditary. Nonsyndromic hearing loss is defined as hearing loss not associated with other physical signs or symptoms. Nonsyndromic hearing loss accounts for 70% to 80% of genetically determined deafness, and it is more difficult to determine whether the etiology is hereditary or acquired.

This policy primarily focuses on the use of genetic testing to identify a cause of suspected hereditary hearing loss. The diagnosis of syndromic hearing loss can be made on the basis of associated clinical findings. However, at the time of hearing loss presentation, associated clinical findings may not be apparent; furthermore, variants in certain genetic loci may cause both syndromic and nonsyndromic hearing loss. Given this overlap, the policy focuses on genetic testing for hereditary hearing loss more generally.

If there is not a high suspicion for a specific hearing loss etiology, ideally the evaluation should occur in a stepwise fashion. About 50% of individuals with autosomal recessive hereditary hearing loss have pathogenic variants in the GJB2 gene, in the other 50% of patients with apparent autosomal recessive hereditary hearing loss, numerous other genes are implicated. There is no single identifiable gene responsible for most cases of autosomal dominant hereditary hearing loss.

If there is suspicion for autosomal recessive congenital hearing loss, it would be reasonable to begin with testing of GJB2 and GJB6 and if testing is negative, screening for the other genes associated with hearing loss with a multigene panel would be efficient. An alternative strategy for suspected autosomal recessive or autosomal dominant hearing loss would be to obtain a multigene panel that includes GJB2 and GJB6 as a first step.

Given the extreme heterogeneity in genetic causes of hearing loss, these 2 strategies may be considered reasonably equivalent.

Below is a list of higher volume tests and the associated laboratories for each criteria section. This list is not all inclusive.

CPT® Codes	Example Tests (Labs)	Criteria Section	Common ICD Codes
81253	GJB2 Targeted Mutation Analysis	Known Familial Variant Analysis	H90.0-H90.8, H91.8X1-H91.8X9

CPT® Codes	Example Tests (Labs)	Criteria Section	Common ICD Codes
81403	GJB6 Targeted Mutation Analysis	Known Familial Variant Analysis	H90.0-H90.8, H91.8X1-H91.8X9
81252, S3844	GJB2 Sequencing Analysis	GJB2 and GJB6 Sequencing and/or Deletion Duplication Analysis or Multigene Panel	H90.0-H90.8, H91.8X1-H91.8X9
81254	GBJ6 Targeted Mutation Analysis; Common Variants	GJB2 and GJB6 Sequencing and/or Deletion Duplication Analysis or Multigene Panel	H90.0-H90.8, H91.8X1-H91.8X9
81479	GJB6 Sequencing Analysis	GJB2 and GJB6 Sequencing and/or Deletion Duplication Analysis or Multigene Panel	H90.0-H90.8, H91.8X1-H91.8X9
81430, 81431	Hearing Loss Panel (GeneDX) PGXome Custom - Hereditary Hearing Loss and Deafness - Comprehensive (PreventionGenetics) Comprehensive Hearing Loss NGS Panel + mtDNA (LabCorp) Comprehensive Hearing Loss NGS Panel (Sequencing & Deletion/Duplication) (Fulgent)	GJB2 and GJB6 Sequencing and/or Deletion Duplication Analysis or Multigene Panel)	H90.0-H90.8, H91.8X1-H91.8X9

This policy document provides criteria for genetic testing for hereditary hearing loss. Please refer to:

- ***CP.MP.234 Genetic Testing: Prenatal and Preconception Carrier Screening*** for criteria related to carrier screening for hereditary hearing loss.
- ***CP.MP.230 Genetic Testing: Multisystem Inherited Disorders, Intellectual Disability, and Developmental Delay*** for criteria related to genetic disorders that affect multiple organ systems

- ***CP.MP.222 Genetic Testing: General Approach to Genetic Testing*** for criteria related to genetic testing for hearing loss that is not specifically discussed in this or another non-general policy.

Policy/Criteria

Hereditary Hearing Loss

Known Familial Variant Analysis

I. It is the policy of health plans affiliated with Centene Corporation® that targeted variant analysis for known familial variant(s) to establish a diagnosis of hereditary hearing loss (81253, 81403) is considered **medically necessary** when:

   A. The member/enrollee has a first-degree[1a] relative with pathogenic or likely pathogenic variant(s) in *GJB2*, *GJB6*, or another gene known to cause hereditary hearing loss.

GJB2 and GJB6 Sequencing and/or Deletion Duplication Analysis or Multigene Panel Analysis

I. It is the policy of health plans affiliated with Centene Corporation® that *GJB2* (81252, S3844) and/or *GJB6* (81254, 81479) sequencing and/or deletion/duplication analysis or multigene panel analysis (81430, 81431) to establish a diagnosis of hereditary hearing loss is considered **medically necessary** when meeting both of the following:

   A. The member/enrollee has hearing loss,

   B. There is no known acquired cause of the hearing loss (e.g., TORCH, bacterial infection, age-related or noise-related hearing loss).

II. It is the policy of health plans affiliated with Centene Corporation® that current evidence does not support *GJB2* (81252, S3844) and/or *GJB6* (81254, 81479) sequencing and/or deletion/duplication analysis or multigene panel analysis (81430, 81431) to establish a diagnosis of hereditary hearing loss for all other indications.

Notes and Definitions

1. Close relatives include first, second, and third degree blood relatives:

   a. **First-degree relatives** are parents, siblings, and children

   b. **Second-degree relatives** are grandparents, aunts, uncles, nieces, nephews, grandchildren, and half siblings

   c. **Third-degree relatives** are great grandparents, great aunts, great uncles, great grandchildren, and first cousins

Background

American College of Medical Genetics and Genomics

The American College of Medical Genetics and Genomics (2014) issued practice guidelines for the clinical evaluation and etiologic diagnosis of hearing loss which stated, that for individuals lacking physical findings suggestive of a known syndrome and having medical and birth histories not suggestive of an environmental cause of hearing loss pretest genetic counseling should be provided, and, with patient's informed consent, genetic testing should be ordered.

American Academy of Pediatrics

The American Academy of Pediatrics (2007) issued recommendations on early hearing detection which stated that infants with confirmed hearing loss and/or middle ear dysfunction should be referred for otologic and other medical evaluation to determine the etiology of hearing loss.

In regard to recommended components of the evaluation and test, the AAP states, "The evaluation, therefore, should include a review of family history of specific genetic disorders or syndromes, including genetic testing for gene mutations such as *GJB2* (connexin-26), and syndromes commonly associated with early-onset childhood sensorineural hearing loss."

The recommendations also stated, "All families of children with confirmed hearing loss should be offered, and may benefit from, a genetics evaluation and counseling. This evaluation can provide families with information on etiology of hearing loss, prognosis for progression, associated disorders (eg, renal, vision, cardiac), and likelihood of recurrence in future offspring. This information may influence parents' decision-making regarding intervention options for their child."

Coding Implications

This clinical policy references Current Procedural Terminology (CPT®). CPT® is a registered trademark of the American Medical Association. All CPT codes and descriptions are copyrighted 2021, American Medical Association. All rights reserved. CPT codes and CPT descriptions are from the current manuals and those included herein are not intended to be all-inclusive and are included for informational purposes only. Codes referenced in this clinical policy are for informational purposes only. Inclusion or exclusion of any codes does not guarantee coverage. Providers should reference the most up-to-date sources of professional coding guidance prior to the submission of claims for reimbursement of covered services.

Reviews, Revisions, and Approvals	Revision Date	Approval Date
Policy developed.	02/22	02/22

References

1. Alford RL, Arnos KS, Fox M, et al. American College of Medical Genetics and Genomics guideline for the clinical evaluation and etiologic diagnosis of hearing loss. *Genet Med*. 2014;16(4):347-355. doi:10.1038/gim.2014.2
2. American Academy of Pediatrics, Joint Committee on Infant Hearing. Year 2007 position statement: Principles and guidelines for early hearing detection and intervention programs. Pediatrics. 2007;120(4):898-921. doi:10.1542/peds.2007-2333

3. Shearer AE, Hildebrand MS, Smith RJH. Hereditary Hearing Loss and Deafness Overview. 1999 Feb 14 [Updated 2017 Jul 27]. In: Adam MP, Ardinger HH, Pagon RA, et al., editors. GeneReviews® [Internet]. Seattle (WA): University of Washington, Seattle; 1993-2020. Available from: https://www.ncbi.nlm.nih.gov/books/NBK1434/

Important Reminder

This clinical policy has been developed by appropriately experienced and licensed health care professionals based on a review and consideration of currently available generally accepted standards of medical practice; peer-reviewed medical literature; government agency/program approval status; evidence-based guidelines and positions of leading national health professional organizations; views of physicians practicing in relevant clinical areas affected by this clinical policy; and other available clinical information. The Health Plan makes no representations and accepts no liability with respect to the content of any external information used or relied upon in developing this clinical policy. This clinical policy is consistent with standards of medical practice current at the time that this clinical policy was approved. "Health Plan" means a health plan that has adopted this clinical policy and that is operated or administered, in whole or in part, by Centene Management Company, LLC, or any of such health plan's affiliates, as applicable.

The purpose of this clinical policy is to provide a guide to medical necessity, which is a component of the guidelines used to assist in making coverage decisions and administering benefits. It does not constitute a contract or guarantee regarding payment or results. Coverage decisions and the administration of benefits are subject to all terms, conditions, exclusions and limitations of the coverage documents (e.g., evidence of coverage, certificate of coverage, policy, contract of insurance, etc.), as well as to state and federal requirements and applicable Health Plan-level administrative policies and procedures.

This clinical policy is effective as of the date determined by the Health Plan. The date of posting may not be the effective date of this clinical policy. This clinical policy may be subject to applicable legal and regulatory requirements relating to provider notification. If there is a discrepancy between the effective date of this clinical policy and any applicable legal or regulatory requirement, the requirements of law and regulation shall govern. The Health Plan retains the right to change, amend or withdraw this clinical policy, and additional clinical policies may be developed and adopted as needed, at any time.

This clinical policy does not constitute medical advice, medical treatment or medical care. It is not intended to dictate to providers how to practice medicine. Providers are expected to exercise professional medical judgment in providing the most appropriate care, and are solely responsible for the medical advice and treatment of member/enrollees. This clinical policy is not intended to recommend treatment for member/enrollees. Member/enrollees should consult with their treating physician in connection with diagnosis and treatment decisions.

Providers referred to in this clinical policy are independent contractors who exercise independent judgment and over whom the Health Plan has no control or right of control. Providers are not agents or employees of the Health Plan.

Note: For Medicaid member/enrollees, when state Medicaid coverage provisions conflict with the coverage provisions in this clinical policy, state Medicaid coverage provisions take precedence. Please refer to the state Medicaid manual for any coverage provisions pertaining to this clinical policy.

Note: For Medicare member/enrollees, to ensure consistency with the Medicare National Coverage Determinations (NCD) and Local Coverage Determinations (LCD), all applicable NCDs, LCDs, and Medicare Coverage Articles should be reviewed prior to applying the criteria set forth in this clinical policy. Refer to the CMS website at http://www.cms.gov for additional information.