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RMHP Cochlear Implant

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MCG Health
Ambulatory Care
27th Edition

Link to Codes

Clinical Indications for Procedure

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Note: For members with **RMHP Individual and Family Plan (IFP) Commercial** coverage, cochlear implants are a specific exclusion and are not a covered benefit per the Evidence/Certificate of Coverage / Schedule of Benefits Plan document(s). Requests for cochlear implants cannot be approved for IFP plan members.

Note: For **RMHP PRIME (Medicaid)** plan members, Cochlear implant is a FFS Medicaid wrap-around benefit. Cochlear implants, batteries and supplies are covered for members up to age 21 as a wrap-around benefit through Health First Colorado (Colorado's direct Medicaid program.) RMHP does not cover cochlear implants for RMHP PRIME (Medicaid) Members.

For Members with **RMHP Medicare (CareAdvantage or Dual Special Needs Plan (DSNP)** health plan coverage, the request will be pended. The reviewer will apply the current CMS Medicare National Coverage Determination (NCD) for Cochlear Implantation (50.3). Publication 100-3. Manual Section 50.3. Version 3. Effective date 9/26/2022. Implementation date 3/24/2023, reviewed 4/9/2023. Provider will be notified of determination when completed.

- Cochlear implant **CHP+ coverage** may be indicated for **1 or more** of the following(1)(2)(3)(4)(5)(6) :
  - The Member has **RMHP Child Health Plan Plus (CHP+)** health plan coverage and is **under age 18 years** , and requires a cochlear implant [A] with **ALL** of the following(11)(12)(13)(14)(15) :

- Age 12 months or older(16)(17)
- Bilateral sensorineural hearing loss with unaided pure-tone average thresholds of 70 dB or greater [B]
- Family support and motivation to participate in postimplant rehabilitation(19)
- Minimal speech perception 30% or less or lack of developmentally appropriate auditory milestones measured using parent report scales
- Three-month to six-month trial of binaural hearing aids documents lack of or minimal improvement (ie, less than appropriate based on age, developmental stage, or cognitive ability) in auditory development. [C]
- No evidence of central auditory dysfunction (eg, cortical deafness)
- No evidence of cochleovestibular anomaly by CT or MRI that would preclude implant (eg, cochlear aplasia, complete labyrinthine aplasia, lack of cochlear nerve), or acoustic neuroma excision planned and cochlear nerve preservation thought possible(22)(16)(23)

Alternatives to Procedure

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- Alternatives include(24)(25):
  - Auditory brainstem implant, when cochlear nerve not intact. See Auditory Brainstem Implants [AC] for further information.
  - Bone anchored hearing aid. See Hearing Aids, Bone Anchored and Bone Conduction [AC] for further information.
  - Hearing aid(26)

Evidence Summary

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Background

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A cochlear implant transforms sound into electrical energy that stimulates surviving auditory nerve fibers in the inner ear. All cochlear implant devices consist of internal and external hardware. External components are worn either behind the ear or on the body. They include a microphone, a sound processor, batteries, and a transmitter that send coded electrical information and power to the internal parts. The internal components are placed surgically underneath the skin and include a receiver and an electrode array within the cochlea.(27)(28)(29)(30)(31) **(EG 2)**

Criteria

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For adults with bilateral sensorineural hearing loss, A systematic review and meta-analysis of 14 studies (679 adult patients) evaluating quality of life improvement after cochlear implantation found that cochlear implantation was associated with significant improvement in quality of life measured by hearing-specific or cochlear implant-specific quality of life patient-reported outcomes.(32) **(EG 1)** A systematic review of 3 randomized controlled trials and 7 observational studies (308 adult patients) with severe to profound sensorineural hearing loss found that compared with unilateral cochlear implantation, bilateral cochlear implantation was associated with improved speech perception in noise, sound localization, and subjective improvements in speech and spatial hearing.(7) **(EG 1)** A systematic review of unilateral vs bilateral cochlear implantation in adults concluded that unilateral implantation with or without the use of hearing aids was effective for improving speech perception in adults with severe to profound sensorineural hearing loss; both simultaneous and sequential bilateral cochlear implantation provided additional improvement in speech perception.(33) **(EG 1)** A systematic review of 14 studies comparing unilateral cochlear implant with or without hearing aid on the non-implant ear vs bilateral cochlear implant found benefit for bilateral implants in noise conditions and in several self-reported

outcome measures.(34) **(EG 1)** A systematic review of sequential cochlear implants in adults and children found that although the quality of the studies was poor, the evidence suggested that a second implant can be beneficial even if there is a substantial interval between implants.(8) **(EG 1)** An industry-sponsored randomized controlled trial of 38 adults with postlingual, severe to profound hearing loss compared simultaneous and sequential (2 years between procedures) bilateral cochlear implants and found, 1 year after both implants were in place, comparable results between the groups in terms of speech intelligibility in noise from straight ahead, from spatially separated sources, and in silence. The authors concluded that patients who receive sequential implants derive the same benefit as those who receive them simultaneously.(35) **(EG 1)** Most adult patients who receive a cochlear implant have improvement in both hearing threshold and ability to lip-read. Postlingual deaf adults attain scores of 90% to 100% for speech-reading capabilities on everyday sentence material and above 80% for high-content sentences after cochlear implant. Over half of postlingual deaf adults can achieve some degree of telephone conversational ability after cochlear implant.(36) **(EG 2)** A prospective study of 94 postlingual deaf patients (65 to 85 years of age) who were treated with cochlear implants for sensorineural hearing loss found a mean improvement in speech perception scores of 52% at 6 months, with continued improvement at 12 months; there was also significant improvement in quality of life. Patients with depression, as assessed by the Geriatric Depression Scale-4 (GDS-4), decreased from 41% to 24% at 12 months after implantation.(37) **(EG 2)** A literature review of patients 65 years and older who were treated with cochlear implants found that patients showed improvement in speech outcomes and quality of life and had similar device complication rates as compared with younger patients. The authors concluded that elderly age should not exclude appropriate candidates for a cochlear implant.(38) **(EG 2)** A national guideline recommends simultaneous bilateral cochlear implantation only for adults with severe to profound deafness who are blind or who have other disabilities that increase their reliance on auditory stimuli as a primary sensory mechanism of spatial awareness.(20) **(EG 2)**

For infants or children with bilateral sensorineural hearing loss, A systematic review of prognostic factors for cochlear implant in children found that improved outcomes were associated with early implant, congenital deafness due to GJB-2 gene mutation, less severe inner ear malformations, and early implant of postmeningitic or congenitally deaf children.(39) **(EG 1)** Multiple studies of unilateral cochlear implant in children demonstrate that functional outcomes are improved when the surgery is performed at a younger age. Eligible children should receive a cochlear implant as soon as bilateral profound hearing impairment is diagnosed to maximize speech and language achievement and integration into an oral communication environment. Children who are implanted when younger than 2 years can experience normal or near-normal rates of auditory skill and oral language development. However, even in older children, the oral language and speech benefits of implant are substantial for those who have some residual hearing because they are able to hear more speech and sound information with the cochlear implant than with a hearing aid.(40)(41)(42)(16) **(EG 2)** A systematic review of 14 studies evaluating the effect of early (before 12 months) cochlear implantation found better scores on speech production, auditory performance, and some receptive language tests in children implanted before 12 months compared with those implanted later. However, the authors noted that the available evidence consisted of cohort studies with moderate to high risk of bias, and recommended long-term follow-up studies.(43) **(EG 1)** A systematic review of 4 studies with a total of 103 pediatric patients found that simultaneous bilateral implantation, as compared with sequential bilateral implantation, resulted in statistically significant higher speech and language development scores 3 years after the first cochlear implantation.(9) **(EG 1)** Children with bilateral cochlear implants that are activated at earlier ages and with shorter gaps between surgeries appear to receive greater benefit than those implanted later and with longer gaps between surgeries.(19) **(EG 2)** Other systematic reviews that compared bilateral cochlear implant with unilateral implant in children found that, although the data are limited, bilateral cochlear implant appeared to be more effective in terms of sound localization and improved speech perception in quiet and noise.(10)(44)(45) **(EG 1)** A systematic review of 13 studies with a total of 1073 pediatric patients compared the outcome of cochlear implantation in children with normal development to those with mild to severe developmental disability; children with mild developmental delay had similar receptive and expressive language outcomes as compared with children without developmental delay, but children with severe developmental delay had worse outcomes. Careful preoperative and postoperative counseling may be particularly important in this patient population.(46) **(EG 1)** A retrospective study of factors associated with limited use and nonuse of cochlear implants in children found that disabilities (eg, cerebral palsy, autism, moderate mental retardation, attention-deficit hyperactivity disorder, learning disability) and lack of family interest were factors that required more support to ensure adequate use.(47) **(EG 2)**

Inconclusive or Non-Supportive Evidence

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For single-sided deafness, A systematic review of 9 studies that included 112 adult patients assessed the use of cochlear implants for single-sided deafness and although studies showed potential benefit for improvement in sound localization, quality of life, and tinnitus suppression, the authors found a lack of high-quality evidence to support this intervention; future high-quality studies to better determine the role of cochlear implants for single-sided deafness were recommended.(48) **(EG 1)** A systematic review of 5 case series (31 pediatric patients) evaluating the use of cochlear implants for unilateral or asymmetric hearing loss concluded that there was insufficient evidence to support this intervention for unilateral hearing loss in children.(49) **(EG 1)**

Policy History

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4/9/2023 annual review and update. NCD revisions. IFP plans specific exclusion.

3/18/2022 Annual review and update to 25th edition MCG.

Summary: Clinical policy in place since 10/27/2012 using the current MCG guideline for CHP+ and Commercial plans with EOC-based age limitations, customized to refer Medicare plans to the current NCD, guiding Medicaid plans to FFS wrap-around benefit due to non-coverage for RAE Prime plans. See Archive versions for details. Upgraded to MCG 23rd edition 8/24/2019. 2020 Annual review - no changes. Upgraded to MCG 24th edition 4/9/2021 with 2021 annual review - no changes.

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The Centers for Medicare and Medicaid Services (CMS) National Coverage Determination (NCD) for Cochlear Implantation (50.3). Publication 100-3. Manual Section 50.3. Version 3. Effective date 9/26/2022. Implementation date 3/24/2023, reviewed 4/9/2023.

The current 2023 Evidence/Certificate of Coverage and Schedule of Benefits for RMHP Plans: IFP, CareAdvantage Value and Enhanced, DSNP plans; Member Handbooks for PRIME and CHP+ plans.

Description

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A cochlear implant device is an electronic instrument, part of which is implanted surgically to stimulate auditory nerve fibers, and part of which is worn or carried by the individual to capture, analyze, and code sound. Cochlear implant devices are available in single-channel and multi-channel models. The purpose of implanting the device is to provide awareness and identification of sounds and to facilitate communication for persons who are moderately to profoundly hearing impaired.

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Footnotes

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[A] Available evidence supports the use of unilateral, sequential bilateral, or simultaneous bilateral cochlear implants in children.(7)(8)(9)(10) [A in Context Link 1]

[B] Pure-tone air-conduction testing assesses hearing function; the threshold is determined by presenting pure tones to a patient and determining the lowest level at which the tone can be heard. A pure-tone average threshold of 25 dB or less is considered normal hearing. Mild hearing loss is characterized by pure-tone average thresholds of 26 dB to 39 dB while moderate hearing loss falls within the range of 40 dB to 69 dB. Severe hearing loss is characterized by pure-tone average thresholds of 70 dB to 89 dB; pure-tone average thresholds of 90 dB or greater are consistent with profound hearing loss.(18) [B in Context Link 1]

[C] Auditory function can be measured by speech, listening, or language skills utilizing instruments such as Early Speech Perception Test (ESP), Meaningful Auditory Integration Scale (MAIS), or Lexical Neighborhood/Multisyllabic Lexical Neighborhood Tests (LNT-MLNT).(20)(21) [C in Context Link 1]

Codes

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HCPCS: L8614, L8615, L8616, L8617, L8618, L8619, L8621, L8622, L8623, L8624, L8625, L8627, L8628, L8629