Medical Coverage Policy

Auditory Brain Stem Implant

☐ Device/Equipment ☐ Drug ☐ Medical ☒ Surgery ☐ Test ☐ Other

Effective Date:	11/15/2011	Policy Last Updated:	3/15/2013

☐ **Prospective review is recommended/required. Please check the member agreement for preauthorization guidelines.**

☒ **Prospective review is not required.**

Description:
The auditory brain stem implant (ABI) is a device designed to restore some hearing in people with neurofibromatosis type II who are rendered deaf by bilateral removal of the characteristic neurofibromas involving the auditory nerve.

The device consists of an externally worn speech processor that provides auditory information to an electrical signal that is transferred to a receiver/stimulator that is implanted in the temporal bone. The receiver stimulator is, in turn, attached to an electrode array that is implanted on the surface of the cochlear nerve in the brain stem, thus bypassing the inner ear and auditory nerve. The electrode stimulates multiple sites on the cochlear nucleus, which is then processed normally by the brain.

One device has received approval by the U.S. Food and Drug Administration (FDA) for auditory brain stem implantation, the Nucleus 24® Auditory Brainstem Implant System (Cochlear Corporation). The speech processor and receiver are similar to the devices used in cochlear implants; the electrode array placed on the brain stem is the novel component of the device. The device is indicated for individuals 12 years of age or older who have been diagnosed with neurofibromatosis type 2 (NF2). Overall device benefit was defined as a significant enhancement of lip-reading or an above-chance improvement on sound-alone tests. Based on this definition, a total of 95% patients (57 of 60) derived benefit from the device. While the use of an auditory brainstem implant (ABI) is associated with a very modest improvement in hearing, this level of improvement is considered significant in this group of patients who have no other treatment options.

The available evidence for unilateral use of ABI devices is sufficient to demonstrate improved net health outcome. Given the lack of both high quality evidence and FDA approval, ABI for non-NF2 conditions and bilateral ABI are considered investigational.

Medical Criteria:

Use of a unilateral auditory brain stem implant (using surface electrodes on the cochlear nuclei) is considered **medically necessary** in patients with neurofibromatosis type II (diagnosis 237.72), 12 years of age or older, who are rendered deaf due to bilateral resection of neurofibromas of the auditory nerve.

Policy:

All BCBSRI products:

Unilateral use of auditory brain stem implant (using surface electrodes on the cochlear nuclei) is considered medically necessary when the medical criteria above are met. It is considered not medically necessary for all other indications.

An auditory brain stem implant is considered **not medically necessary** for all other conditions including non-neurofibromatosis-type II indications as there are inadequate data to permit scientific conclusions regarding its efficacy.

Bilateral use of an auditory brain stem implant is considered **not medically necessary** as there are inadequate data to permit scientific conclusions regarding its efficacy.

Penetrating electrode auditory brainstem implant (PABI) is considered **not medically necessary** as there are inadequate data to permit scientific conclusions regarding its efficacy.

Coverage:
Benefits may vary by group/contract. Please refer to the appropriate Evidence of Coverage or Subscriber Agreement for "Surgery Services" and "Services Not medically Necessary".

Coding:
CPT
92640 Diagnostic analysis with programming of auditory brainstem implant, per hour

When filing for a covered indication, providers should file S2235 only with diagnosis code 237.72.
HCPCS
S2235 Implantation of auditory brain stem implant

Diagnosis Code:
237.72

ICD-10
Q85.02

Related Policies:

Fully Implantable and Semi-Implantable Middle Ear Hearing Aid
https://www.bcbsri.com/sites/default/files/polices/FullyandSemiImplantableHearingAid_0.pdf

Cochlear Implants
https://www.bcbsri.com/providers/policies

Publications:
Provider Update, May 2013
Provider Update, April 2012
Provider Update, May 2011
Provider Update, May 2010

References:
Blue Cross and Blue Shield Association. Medical Policy Reference Manual. Policy# 7.01.83 Auditory Brainstem Implant. Accessed 02/13/2013.

CMS Benefit Policy Manual Ch.16, Sec. 100 - Hearing Aids and Auditory Implants. Accessed 2/13/2013.

Vincentia, V et al. Audiol Neurotol 2008;13:273-280 (DOI: 0.1159/000115437) Hearing Rehabilitation in Neurofibromatosis Type 2 Patients: Cochlear versus Auditory Brainstem Implantation. Accessed 01/11/2012

Otol Neurotol. 2008 Dec;29(8):1140-6. Auditory brainstem implant in neurofibromatosis type 2 and non-neurofibromatosis type 2 patients. Accessed 02/19/2010
http://www.ncbi.nlm.nih.gov/pubmed/18849886?itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum&ordinalpos=53

Maini S, Cohen MA, Hollow R, Briggs R.Cochlear Implants Int. 2009;10 Suppl 1:33-7.Update on long-term results with auditory brainstem implants in NF2 patients. Accessed 02/19/2010
http://www.ncbi.nlm.nih.gov/pubmed/19230037?itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum&ordinalpos=36

Tidsskr Nor Laegeforen. 2009 Aug 13;129(15):1469-73.[Neurofibromatosis type 2 and auditory brainstem implantation] Accessed 02/01/2010
http://www.ncbi.nlm.nih.gov/pubmed/19690597?itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum&ordinalpos=16

Davis, NL, Rappaport, JM, MacDougallJC, Cochlear and Auditory Brainstem Implants in the Management of Acoustic Neuroma and Bilateral Acoustic Neurofibromatosis. Accessed 02/01/2010

National Institute for Health and Clinical Excellence (NICE). Auditory brain stem implants.Interventional procedure guidance 108. Issued January, 2005. Accessed 02/01/2010

http://www.nice.org.uk/pdf/IPG108guidance.pdf

Review History: