Vestibular Dysfunction Evaluation

Policy Number:	**M2018031403**
Effective Date:	**5/1/2018**
Sponsoring Department:	**Health Care Services**
Impacted Department(s):	**Health Care Services**

Type of Policy: ☒ Internal ☒ External

Data Classification: ☐Confidential ☐Restricted ☒Public

Applies to (Line of Business):

☐ Corporate (All)
☒ State Products, if yes which plan(s): ☒MediSource; ☒ MediSource Connect; ☒Child Health Plus ☒Essential Plan
☒ Medicare, if yes, which plan(s): ☒MAPD; ☐PDP; ☒ISNP; ☒CSNP
☒ Commercial, if yes, which type: ☒Large Group; ☒Small Group; ☒Individual
☒ Self-Funded Services *(Refer to specific Summary Plan Descriptions (SPDs) to determine any pre-authorization or pre-certification requirements and coverage limitations. In the event of any conflict between this policy and the SPD of a Self-Funded Plan, the SPD shall supersede the policy.)*

Excluded Products within the Selected Lines of Business (LOB)

Applicable to Vendors? Yes ☐ No☒

Purpose and Applicability:

To set forth Independent Health's criteria for vestibular function testing.

Policy:

Commercial, Self-Funded, and Medicare Advantage:

1. **Electronystagmography** and **Videonystagmography –**Electronystagmography (ENG) and Videonystagmography are considered medically necessary for evaluation of persons with symptoms of vestibular disorders (dizziness, vertigo, disequilibrium or imbalance).

   Independent Health considers videonystagmography (VNG) a medically necessary alternative to ENG for assessment of vestibular disorders.

2. **Vestibular evoked myogenic potential** (VEMP) tests are considered investigational as there is insufficient clinical evidence in the peer-reviewed medical literature to support whether VEMP can accurately identify vestibular function.

3. **Video head impulse test (vHIT)** tests are considered investigational as there is insufficient clinical evidence in the peer-reviewed medical literature to support the use of vHIT for assessing balance problems.

4. **Computerized Dynamic Posturography (CDP)** is considered investigational as there is insufficient clinical evidence in the peer-reviewed medical literature to support the use of CDP for assessing balance problems. There is also insufficient evidence to determine whether CDP detects vestibular dysfunction or whether CDP distinguishes between peripheral and central vestibular dysfunction as well as the impact of CDP testing to determine if such tests result in improved health outcomes.

Note: Vestibular rehabilitation utilizing virtual reality devices, including but not limited to the VIVE device, is considered experimental and investigational as its efficacy has not been established in the peer-reviewed literature.

MediSource, MediSource Connect, Child Health Plus and Essential Plan:
MediSource, MediSource Connect, Child Health Plus and Essential Plan utilize the Commercial, Self-Funded and Medicare Advantage criteria above**.**

Background:
Vertigo is the predominant symptom that arises from an acute asymmetry of the vestibular system. Patients often experience vertigo as an illusion of motion; some interpret this as self-motion, others as motion of the environment. The most common perception is a spinning sensation; patients may also use terms such as "whirling," "tilting," or "moving."

Typical tests for patients with vertigo include brain imaging, electronystagmography (ENG) and videonystagmography (VNG), audiometry, and brainstem auditory evoked potentials. The initial evaluation of vertigo also includes patient history, physical examination including neurologic examination. Diagnostic tests performed may include hearing tests, the Dix-Hallpike maneuver, radiologic studies including MRI.

The Head Impulse Test is a diagnostic test where the clinician turns the patient's head abruptly and unpredictably in the plane of a SCC pair, about 15° in about 100 ms, and observes the instantaneous

compensatory eye movement response. During each head impulse, the eye movement response of a healthy subject will compensate for head turn and gaze will stay fixed on the earth-fixed fixation target. However, the eyes of a patient without vestibular function (an "avestibular" patient) will move with the head so that the patient has to make a corrective saccade at the end of each head impulse in order to return his gaze to the earth-fixed target. In video Head Impulse Testing (vHIT), the head impulse test is conducted with a high-speed head-mounted camera on tight-fitting goggles with head velocity sensors, and software for accurate objective measures of the head and eye velocity. The camera measures the center of the pupil, and valid measures require an excellent image of the eye, uncontaminated by the eye lid.

Vestibular evoked myogenic potentials (VEMPs) are vestibular-dependent reflexes thought to originate in the otolith organs -the saccule and utricle -and recorded from the extraocular and cervical muscles. To elicit these reflexes, the vestibular organs are stimulated with short bursts of loud air-conducted sound or bone-conducted skull vibration and muscle activity is recorded from surface electrodes placed over or near the respective muscles.

The American Academy of Neurology published clinical guidelines in 2017 stating the evidence is insufficient to determine whether VEMP can accurately identify vestibular function specifically related to the saccule/utricle, or whether VEMP is useful in diagnosing vestibular neuritis or Ménière disease.

CDP, an alternative to standard diagnostic tests such as electronystagmography and rotational chair tests, measures a patient's ability to maintain balance under varying conditions when the usual cues that one relies upon to remain upright, vision, proprioception, and vestibular function, are manipulated. The goal of testing is to isolate vestibular symptoms to a specific cause that can often be treated. The protocol for CDP testing includes sensory organization, motor control and adaptation testing. The sensory organization test assesses the patient's ability to balance using visual, vestibular and proprioceptive information to evaluate the effect on standing balance. The motor test measures the ability to reflexively recover from unexpected external provocations. The adaptation test measures the ability to modify automatic reactions when the support surface is irregular or unstable. There is a lack of peer-reviewed scientific evidence to support the use of CDP at this time.

An evaluation of the peer-reviewed scientific literature, including but not limited to subscription materials, has provided Independent Health the basis for its medical necessity coverage outlined above.

Pre-Authorization Required? Yes ☐ No☐ Other ☒

Pre-authorization is required for Computerized Dynamic Posturography, Vestibular Evoked Myogenic Potential, and vestibular rehabilitation utilizing virtual reality devices.

For the other services, pre-authorization is not required at the present time. Criteria above will be utilized upon retro-review.

Definitions

Computerized dynamic posturography (CDP) is a diagnostic test used to assess balance problems that may be caused by peripheral vestibular or oculovestibular dysfunction. Also known as moving platform posturography, dynamic posturography or Equitest™, the test involves the use of a platform that can be

manipulated to assess the patient's responses to various demands on postural equilibrium control (balance). It attempts to identify disequilibrium due to pathology of the labyrinthine sensory organs (e.g., semicircular canals and otoliths) and the oculovestibular and somatosensory vestibular pathways. It is proposed that posturography is useful to assess progress in patients undergoing rehabilitation for balance disorders and postural deficits.

Electronystagmography (ENG) uses electrodes to record eye movements. This technique records and quantifies both spontaneous and induced nystagmus.

Vestibular evoked myogenic potential (VEMP) is a vestibular test where responses are measured from different muscles in the neck and around the eyes. VEMP testing uses adhesive, skin surface electrodes and earphones. Sound is played for a few seconds through the earphones; the vestibular organs are stimulated and activate muscle responses while the electrodes record the results.

Video Head Impulse Test (vHIT) evaluates how well the eyes and inner ears work together. A small set of glasses with a camera are used to monitor eye movements. The vHIT test uses very small and quick movements of the head to evaluate reflex function, as opposed to the slow or moderate speeds used in rotation testing.

Videonystagmography (VNG) uses video cameras to record eye movements. This technique records and quantifies both spontaneous and induced nystagmus.

References

Related Policies, Processes and Other Documents
N/A

Non-Regulatory references
Amin M, Girardi M, Konrad HR, Hughes L. A comparison of electronystagmography results with posturography findings from the BalanceTrak 500. Otol Neurotol. 2002;23(4):488-493.

Bhattacharyya N, Gubbels SP, Schwartz SR, et al. Clinical Practice Guideline: Benign Paroxysmal Positional Vertigo (Update). Otolaryngology–Head and Neck Surgery. 2017;156(3_suppl):S1-S47.

Fife TD, Colebatch JG, Kerber KA, et al. Practice guideline: Cervical and ocular vestibular evoked myogenic potential testing: Report of the Guideline Development, Dissemination, and Implementation Subcommittee of the American Academy of Neurology. Neurology. 2017 Nov 28;89(22):2288-2296.

Furman JM, Barton J. Evaluation of the patient with vertigo. In: UpToDate, Post TW (Ed), UpToDate, Waltham, MA. Accessed on October 19, 2023

Hain TC. Moving platform posturography testing. Modified October 24 , 2021 . Dizziness-and-balance.com [website]. Available at: https://dizziness-and-balance.com/testing/posturography.html Accessed October 19, 2023

Halmagyi GM, Chen L, MacDougall HG, Weber KP, McGarvie LA, Curthoys IS. The Video Head Impulse Test. Front Neurol. 2017 Jun 9; 8:258.

Hayes, Inc. Evolving Evidence Review. Computerized Dynamic Posturography for Diagnosis of Vestibular Disorders. Lansdale PA: August 2021 .

Hayes, Inc. Health Technology Brief. Computerized Dynamic Posturography (CDP) for Diagnosis of Vestibular Disorders. Lansdale PA: June 2008.

Hayes, Inc. Search and Summary Vestibular Evoked Myogenic Potential (VEMP) Testing in Adults with Vertigo. Lansdale, PA: August 2015.

Papathanasiou ES, Murofushi T, et al. International guidelines for the clinical application of cervical vestibular evoked myogenic potentials: an expert consensus report. Clin Neurophysiol. 2014 Apr;125(4):658-66.

Vestibular Disorders Association (VeDA) [web site]. Diagnostic Tests for Vestibular Disorders. Available at: https://vestibular.org/article/diagnosis-treatment/diagnosis/ =Accessed October 19, 2023

Weber KP, Ros engren SM. Clinical utility of ocular vestibular-evoked myogenic potentials (oVEMPs). Curr Neurol Neurosci Rep. 2015 May;15(5):22.

Xie M, Zhou K, Patro N, et al. Virtual Reality for Vestibular Rehabilitation: A Systematic Review. Otol Neurotol. 2021 Aug 1;42(7):967-977.

Regulatory References

New York State Department of Health [web site]. New York State Medicaid Program Provider Manual. Ordered Ambulatory Procedure Codes. July 2023 . Available at: https://www.emedny.org/ProviderManuals/OrderedAmbulatory/PDFS/OrderedAmbulatory_Procedure_Codes.pdf Accessed March 22, 2022

This policy contains medical necessity criteria that apply for this service. Please note that payment for covered services is subject to eligibility criteria, contract exclusions and the limitations noted in the member's contract at the time the services are rendered.

Version Control

Sponsored By:

Signature / Approval on File? Yes ☒ No☐

Revision Date	Owner	Notes
1/1/2024	Health Care Services	Revised
12/1/2022	Health Care Services	Revised
5/1/2022	Health Care Services	Reviewed
5/1/2021	Health Care Services	Reviewed
5/1/2020	Health Care Services	Reviewed

5/1/2019	Medical Management	Revised