Department of HUMAN SERVICES

Transcranial Magnetic Stimulation

IME-THR-001

Iowa Medicaid Program:	Prior Authorization	**Effective Date:**	7/1/2020
Revision Number:	3	**Last Rev Date:**	10/15/2021
Reviewed By:	Medicaid Medical Director	**Next Rev Date:**	10/21/2022
Approved By:	Medicaid CAC	**Approved Date:**	1/24/2020

Descriptive Narrative

Transcranial magnetic stimulation (TMS) is a noninvasive method of delivering electrical stimulation to the brain. A magnetic field is delivered through the skull, where it induces electric currents that affect neuronal function. Repetitive TMS (rTMS) is being evaluated as a treatment of depression and other psychiatric/neurologic brain disorders. Imaging studies had showed a decrease in activity of the left dorsolateral prefrontal cortex (DLPFC) in depressed patients, and early studies suggested that high frequency (e.g., 5–10 Hz) TMS of the left DLPFC had antidepressant effects.

In contrast to electroconvulsive therapy, TMS can be performed in an office setting as it does not require anesthesia and does not induce a convulsion.

TMS is also being studied as a treatment for a variety of other disorders including alcohol dependence, Alzheimer's disease, neuropathic pain, obsessive-compulsive disorder, postpartum depression, depression associated with Parkinson's disease, schizophrenia, migraine, spinal cord injury, tinnitus, autism, eating disorders, and fibromyalgia. Currently, FDA approval for conditions outside of major depression only include obsessive compulsive disorder (OCD). For the treatment of OCD, studies on efficacy are extremely limited.

Treatment

A typical rTMS session lasts 30 to 60 minutes and does not require anesthesia. During the procedure an electromagnetic coil is held against the forehead near an area of the brain that is thought to be involved in mood regulation. Then, short electromagnetic pulses are administered through the coil. The magnetic pulses easily pass through the skull, and causes small electrical currents that stimulate nerve cells in the targeted brain region.

Because this type of pulse generally does not reach further than two inches into the brain, scientists can select which parts of the brain will and will not be affected. The magnetic field is about the same strength as that of a magnetic resonance imaging

scan. Generally, the person feels a slight knocking or tapping on the head as the pulses are administered.

Not all scientists agree on the best way to position the magnet on the patient's head or give the electromagnetic pulses. They also do not yet know if rTMS works best when given as a single treatment or combined with medication and/or psychotherapy. More research is underway to determine the safest and most effective uses of rTMS.

Side Effects

A person may have discomfort at the site on the head where the magnet is placed. The muscles of the scalp, jaw, or face may contract or tingle during the procedure. Mild headaches or brief lightheadedness may result. It is also possible that the procedure could cause a seizure, although documented incidences of this are uncommon. Two large-scale studies on the safety of rTMS found that most side effects, such as headaches or scalp discomfort, were mild or moderate, and no seizures occurred. Because the treatment is relatively new, however, long-term side effects are unknown.

Criteria

TMS is considered medically necessary when **ALL** of the following criteria are met:

1. Member is 18 years of age or older; **AND**
2. Diagnosis of major depressive disorder or persistent depressive disorder (DSM 5 diagnostic terminology); **AND**
3. Failure of a full course of evidence-based psychotherapy, such as cognitive behavioral therapy for the current depressive episode; **AND**
4. Failure or intolerance to psychoparmacologic agents, choose **ONE** of the following:
    a. Failure of psychopharmacologic agents, **BOTH** of the following:
        1) Lack of clinically significant response in the current depressive episode to four trials of agents from at least two different agent classes; **AND**
        2) At least two of the treatment trials were administered as an adequate course of mono- or poly-drug therapy with antidepressants, involving standard therapeutic doses of at least 6 weeks duration.
    b. The member is unable to take anti-depressants due to **ONE** of the following:
        1) Drug interactions with medically necessary medications; **OR**
        2) Inability to tolerate psychopharmacologic agents, as evidenced by trials of four such agents with distinct side effects in the current episode; **AND**
5. No contraindications to TMS are present (see section on contraindications); **AND**
6. Electroconvulsive therapy has previously been attempted, is medically contraindicated, or has been offered and declined by the member.

Treatment Course

Once approved, a course of 30 sessions (typically 5 days a week for 6 weeks) followed by six sessions for tapering therapy over the next several weeks.

Maintenance Therapy

Maintenance therapy is considered not medically necessary as there is insufficient evidence to support this treatment at the present time.

Retreatment

Retreatment is be considered medically necessary when **ALL** of the following criteria have been met:

1. Current major depressive symptoms have worsened by 50 percent from the prior best response of the PHQ-9 score; **AND**
2. Prior treatment response demonstrated a 50 percent or greater reduction from baseline depression scores; **AND**
3. No contraindications to TMS are present (see section on contraindications).

Contraindications

1. History of seizure disorder. Individuals with dehydration may be more prone to seizures so hydration prior to treatments is recommended.
2. Metal implants or devices present in the head or neck.
3. Substance abuse at the time of treatment.
4. Diagnosis of severe dementia.
5. Diagnosis of severe cardiovascular disease.

Investigational

TMS is considered investigational in the treatment of all other psychiatric or neurological disorders, including but not limited to bipolar disorder, OCD, dementia, substance abuse, chronic pain syndrome, eating disorders, PTSD, and schizophrenia.

Literature does not support use of TMS in the pediatric population younger than 18 years of age. Additional concerns of using stimulation in the developing brain need to be addressed that show safety and long-term efficacy of therapy. Therefore, TMS would be considered investigational for this group.

Coding

The following list(s) of codes are provided for reference purposes only and may not be all inclusive. The inclusion of a code does not imply any right to reimbursement or guarantee claim payment, nor does the exclusion of a code imply that its association to the HCPCS/CPT code is inappropriate.

HCPCS	Description
90867	Therapeutic repetitive transcranial magnetic stimulation (TMS) treatment; initial, including cortical mapping, motor threshold determination, delivery and management.
90868	Therapeutic repetitive transcranial magnetic stimulation (TMS) treatment; subsequent delivery and management, per session
90869	Therapeutic repetitive transcranial magnetic stimulation (TMS) treatment; subsequent motor threshold re-determination with delivery and management.

References

Consensus Recommendations for the Clinical Application of Repetitive Transcranial Magnetic Stimulation (rTMS) in the Treatment of Depression.

May 2017The Journal of Clinical Psychiatry 79(1).

DOI: 10.4088/JCP.16cs10905.

Evidence-based guidelines on the therapeutic use of repetitive transcranial magnetic stimulation (rTMS).

June 2014Clinical neurophysiology: official journal of the International Federation of Clinical Neurophysiology 125(11).

DOI: 10.1016/j.clinph.2014.05.021.

https://www.nimh.nih.gov/health/topics/brain-stimulation-therapies/brain-stimulation-therapies.shtml.

OPTUM360 EncoderPro.

Daily left prefrontal transcranial magnetic stimulation therapy for major depressive disorder: a sham-controlled randomized trial. George MS, Lisanby SH, Avery D, McDonald WM, Durkalski V, Pavlicova M, Anderson B, Nahas Z, Bulow P, Zarkowski P, Holtzheimer PE 3rd, Schwartz T, Sackeim HA. Arch Gen Psychiatry. 2010 May;67(5):507-16. doi: 10.1001/archgenpsychiatry.2010.46.

Development of utilization management criteria may also involve research into other state Medicaid programs, other payer policies, consultation with experts and review by the Medicaid Clinical Advisory Committee (CAC). These sources may not be referenced

individually unless they are specifically published and are otherwise applicable to the criteria at issue.

Criteria Change History

Change Date	Changed By	Description of Change	Version

Signature

Change Date	Changed By	Description of Change	Version

Signature

Change Date	Changed By	Description of Change	Version
10/15/2021	CAC	Annual review.	3

Signature
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Change Date	Changed By	Description of Change	Version
1/13/2020	Medical Director	Investigational to medically necessary.	2

Signature
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Change Date	Changed By	Description of Change	Version
10/20/2017		Criteria development/investigational.	1

Signature
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