Repetitive Transcranial Magnetic Stimulation
THR-001

Iowa Medicaid Program	Prior Authorization	**Effective Date**	07/01/2020
Revision Number	7	**Last Rev Date**	01/17/2025
Reviewed By	Medicaid Medical Director	**Next Rev Date**	01/16/2026
Approved By	Medicaid Clinical Advisory Committee	**Approved Date**	01/24/2020

Descriptive Narrative

Repetitive transcranial magnetic stimulation (rTMS) is a safe, noninvasive neuromodulation therapy for major depressive disorder (MDD). rTMS is applied over the prefrontal cortex and induces a magnetic field that results in the depolarization of underlying neurons and the modulation of the neural circuitry involved in emotion regulation and depressive symptoms. Imaging studies have shown 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) rTMS of the left DLPFC resulted in antidepressant effects.

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

rTMS 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

rTMS is considered medically necessary when **ALL** of the following 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 psychopharmacologic agents, choose **ONE** of the following:
    a. Failure of psychopharmacologic agents, including **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; **AND**
    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 rTMS are present (see section on contraindications); **AND**
6. The member has no acute or chronic psychotic symptoms or disorders and no acute suicidal ideation.

Requests for use of treatments for adolescents between 15-17 will be considered on a case-by-case basis.

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 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 rTMS are present (see section on contraindications).

Contraindications

1. Epilepsy or history of seizure or presence of other neurologic disease that may lower seizure threshold, such as stroke, severe head trauma, or increased intracranial pressure.
2. Metal implants or devices present in the head or neck, such as cochlear implant, deep brain stimulator, or vagus nerve stimulator.
3. Substance abuse at the time of treatment, which may lower the seizure threshold.
4. Metallic hardware of implanted magnetic-sensitive medical device, such as implanted cardioverter-defibrillator, pacemaker, or metal aneurysm

clips or coils, at a distance within the electromagnetic field of the discharging coil (less than or equal to 30 cm to the discharging coil).

5. Tattoos in the head or neck made with ferromagnetic-containing ink.

Investigational

rTMS is considered investigational in the treatment of all other psychiatric or neurological disorders, including but not limited to:

- Bipolar disorder,
- Obsessive compulsive disorder,
- Anxiety disorders,
- Alzheimer's disease,
- Substance abuse disorders,
- Peripartum depression,
- Post traumatic stress disorder,
- Tourette's syndrome,
- Chronic pain syndrome,
- Eating disorders,
- Schizophrenia.

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

Treatment of depression with intermittent theta-burst stimulation (iTBS) is considered investigational.

Coding

The following list of codes is 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.

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

Compliance

1. Should conflict exist between this policy and applicable statute, the applicable statute shall supersede.
2. Federal and State law, as well as contract language, including definitions and specific contract provisions or exclusions, take precedence over medical policy and must be considered first in determining eligibility for coverage.
3. Medical technology is constantly evolving, and Iowa Medicaid reserves the right to review and update medical policy on an annual and as-needed basis.

Medical necessity guidelines have been developed for determining coverage for member benefits and are published to provide a better understanding of the basis upon which coverage decisions are made. They include concise clinical coverage criteria based on current literature review, consultation with practicing physicians in the service area who are medical experts in the particular field, FDA and other government agency policies, and standards adopted by national accreditation organizations. Criteria are revised and updated annually, or more frequently if new evidence becomes available that suggests needed revisions.

References

McClintock SM. Reti IM. Carpenter LL. et. al. Consensus Recommendations for the Clinical Application of Repetitive Transcranial Magnetic Stimulation (rTMS) in the Treatment of Depression. HHS Public Access. J Clin Psychiatry. 2018: 79 (1). doi:10.4088/JCP.16cs10905.

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Gallop L. Westwood SJ. Lewis Y. Campbell Il. Schmidt U. Effects of transcranial direct current stimulation in children and young people with psychiatric disorders: a systematic review. Eur Child Adolesc Psychiatry. 2024 Sep;33(9):3003-3023. doi: 10.1007/s00787-023-02157-0. Epub 2023 Feb 11. PMID: 36764973; PMCID: PMC11424672.

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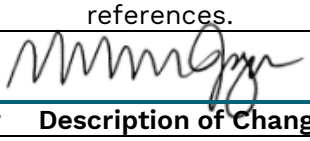
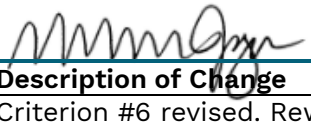
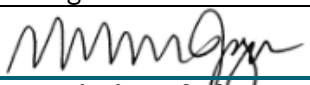
De Quevedo JL FDA greenlights TMS Therapy for Adolescent Depression. Psychiatry and Behavioral Sciences. McGovern Medical School April 29, 2024.

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**
01/17/2025	CAC	Annual Review. Added #5 under Contraindications. Removed three contraindications and removed “No” from two. Added requests for use of treatments for adolescents between 15-17 will be considered on a case-by-case basis. Updated references.	7
Signature William (Bill) Jagiello, DO			
Change Date	**Changed By**	**Description of Change**	**Version**
10/20/2023	CAC	Annual review.	6
Signature William (Bill) Jagiello, DO			
Change Date	**Changed By**	**Description of Change**	**Version**
10/21/2022	CAC	Criterion #6 revised. Rewrite of Descriptive Narrative, Contraindications, updated References. Added Compliance section. Minor formatting changes.	5
Signature William (Bill) Jagiello, DO			
Change Date	**Changed By**	**Description of Change**	**Version**
06/08/2022	Medical Director	Added references.	4
Signature William (Bill) Jagiello, DO			
Change Date	**Changed By**	**Description of Change**	**Version**
10/15/2021	CAC	Annual review.	3
Signature William (Bill) Jagiello, DO			
Change Date	**Changed By**	**Description of Change**	**Version**
01/13/2020	Medical Director	Investigational to medically necessary.	2
Signature William (Bill) Jagiello, DO			
Change Date	**Changed By**	**Description of Change**	**Version**
10/20/2017		Criteria development/investigational.	1
Signature C. David Smith, MD