**Important note**

Even though this policy may indicate that a particular service or supply may be considered covered, this conclusion is not based upon the terms of your particular benefit plan. Each benefit plan contains its own specific provisions for coverage and exclusions. Not all benefits that are determined to be medically necessary will be covered benefits under the terms of your benefit plan. You need to consult the Evidence of Coverage to determine if there are any exclusions or other benefit limitations applicable to this service or supply. If there is a discrepancy between this policy and your plan of benefits, the provisions of your benefits plan will govern. However, applicable state mandates will take precedence with respect to fully insured plans and self-funded non-ERISA (e.g., government, school boards, church) plans. Unless otherwise specifically excluded, Federal mandates will apply to all plans. With respect to Senior Care members, this policy will apply unless Medicare policies extend coverage beyond this Medical Policy & Criteria Statement. Senior Care policies will only apply to benefits paid for under Medicare rules, and not to any other health benefit plan benefits. CMS’s Coverage Issues Manual can be found on the CMS website.

**SERVICE:** Transcranial Magnetic Stimulation for Depression

**PRIOR AUTHORIZATION:** Required.

**POLICY:** SWHP may consider a course of repetitive transcranial magnetic stimulation (rTMS) medically necessary for the treatment of depression when the following criteria are met:

- Administered by an FDA approved device and utilized in accordance with the FDA labeled indications; AND
- Must be ordered and administered by a psychiatrist; AND
- Member is age 18 years or older; AND
- The member has a confirmed diagnosis of severe major depressive disorder (single or recurrent episode) as measured with a validated depression rating tool such has the Hamilton Depression Rating Scale or similar validated instrument, AND
- The member has no contraindications to rTMS; AND
- There is documentation of failure of a trial of a psychotherapy; AND
- The member is currently receiving or is a candidate for electroconvulsive therapy (ECT) and rTMS is considered a less invasive treatment option; AND
- The member meets one of the following criteria:
  - There is documentation of failure of at least FOUR trials of psychopharmacologic agents, including 2 different agent classes, during the current depressive episode. Failed medication trials requires antidepressant medication(s) dosed at the full usual antidepressant dose with validated compliance for a minimum of 6 weeks with continuous depression symptom monitoring with serial Hamilton Depression Rating Scales or similarly validated instrument; OR
  - The member is unable to tolerate a therapeutic dose of medications as evidenced by documentation of FOUR trials of psychopharmacologic agents with distinct side effects;

If criteria are met, up to 30 visits over a 4–6 week period week (or 5 treatments a week for 6 weeks up to a maximum of 30 treatment for the acute episode) and may be followed by six tapered treatments over a three week period.

**Repeat** rTMS therapy may be medically necessary when the following criteria are met:
• Criteria for the initial treatment were met; AND
• There has been a relapse of severe major depressive disorder; AND
• There was a positive response to previous rTMS treatment as evidenced by a 50% or greater improvement in standardized rating scales;

If criteria are met, up to 30 visits over a 4–6 week period and may be followed by six tapered treatments over a three week period

Treatment requests exceeding 36 sessions will be reviewed for medical necessity.

SWHP considers rTMS investigational in persons with any of the following contraindications to rTMS because the safety and effectiveness in person with these contraindications has not been established:

• Members who do not meet criteria for major depressive disorder;
• Members with high alcohol or illicit drug consumption;
• Presence of psychosis in the current depressive episode;
• Acute or chronic psychotic disorders;
• Members having a metal implant in or around the head (e.g., aneurysm coil or clip, metal plate, ocular implant, stent);
• Members with neurological conditions (such as cerebrovascular disease, major neurocognitive disorder (dementia), history of repetitive or severe head trauma, increased intracranial pressure or tumors in the central nervous system);
• Members with a seizure disorder/epilepsy.

Members with severe cardiovascular disease, must be evaluated and cleared for rTMS treatment by a cardiologist.

SWHP considers rTMS maintenance therapy for depression to be experimental and investigational because the effectiveness and safety of rTMS maintenance therapy has not been established.

SWHP considers transcranial magnetic stimulation experimental and investigational for all other indications because its value and effectiveness has not been established

OVERVIEW:

An rTMS system is a class II electromagnetic device that non-invasively delivers a focal, rapidly pulsed magnetic field to the cerebral cortex in order to activate neurons within a limited volume without inducing a seizure. This procedure entails placement of an electromagnetic coil on the scalp; high-intensity electrical current is rapidly turned on and off in the coil through the discharge of capacitors. Depending on stimulation parameters (frequency, intensity, pulse duration, stimulation site), repetitive TMS (rTMS) to specific cortical regions can either increase or decrease the excitability of the affected brain structures. The device is intended to be used to treat patients meeting clinical criteria for MDD as defined in the Diagnostic and Statistical Manual of Mental Illnesses. This procedure does not affect memory nor usually does it cause seizures.

SUPPORTING DATA: The following definitions and recommendations for measurement are used:
**Frequency:** The number of pulses per second expressed in Hertz (Hz).

**Magnetic Field Strength:** Magnetic field strength is expressed as B, the magnetic flux density, in units of Tesla. The time rate of change of B determines the current density level induced in the cortex; therefore, dB/dt is used to express the strength of the field induced by the magnetic field at a given point. The units for magnetic field flux (i.e., dB/dt) are Tesla/second. Magnetic field strength is determined by measuring the voltage induced across a small pickup loop placed at the location of interest.

**Motor Threshold (MT)/MT Intensity:** The motor threshold level is the minimum stimulator setting, in Standard Motor Threshold (SMT) units, that induces an observable motor response by the patient in 50% of the applied pulses, usually as observed by movement of the thumb. “MT level” is determined with the rTMS treatment coil positioned over a specific location within the motor strip, called the motor threshold location (MT location). The MT location may be used as an anatomic reference point for navigating the coil to the rTMS treatment location. The MT level is used as a reference point for setting the rTMS treatment intensity, usually expressed as a percent multiple of the MT level, e.g. 120% MT.

**Pulse Width:** When your rTMS output is a damped sinusoidal wave, the pulse width is defined as the time (duration) from the initial peak to next peak of the wave; it is also described as the period of the sinusoidal wave. For monophasic pulse shapes, we recommend reporting pulse width as the time between the rising phase and falling phase of the wave measured at a standard amplitude (e.g., 10% of total amplitude). The pick-up loop for making this measurement should be located at the same distance from the coil as the target tissue in the brain.

**SMT Unit:** So that measurement of stimulator magnetic field output may be standardized, the SMT unit is suggested. 1.0 SMT is the output setting of a rTMS device that corresponds to an induced electric field of 130V/m at a point located at the fixed distance of the target along the central axis of the coil from the surface of the scalp into the cortex. This induced electric field is measured with a pick-up loop with the dipole oriented along the front-to-back (i.e., normally anterior-posterior) axis of the treatment coil.

**Stimulation Volume:** Stimulation volume defines the region of cortical tissue within the magnetic field that is above the threshold of cortical stimulation, i.e., the 3-dimensional volume within which the induced electric field achieves a value greater than or equal to 80% of the electric field at the 2.0 cm reference point. For example, for a treatment at the 120% MT level, the field at the boundary of the stimulation volume is equivalent to the MT level and all tissue within the stimulation volume is above the MT level.

**CODES:**

*Important note:*

**CODES:** Due to the wide range of applicable diagnosis codes and potential changes to codes, an inclusive list may not be presented, but the following codes may apply. Inclusion of a code in this section does not guarantee that it will be reimbursed, and patient must meet the criteria set forth in the policy language.

<table>
<thead>
<tr>
<th>CPT Codes</th>
<th>Description</th>
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<tr>
<td>90867</td>
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<td>Transcranial magnetic stim tx delivery</td>
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<td>Transcranial magnetic stim redetermine</td>
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<tr>
<td>F33.2 MDD, recurrent severe without psychotic features</td>
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**CMS:** Local Coverage Determination (LCD): L34998 Transcranial magnetic stimulation (TMS) for the Treatment of Depression

**POLICY HISTORY:**
REFERENCES:
The following scientific references were utilized in the formulation of this medical policy. SWHP will continue to review clinical evidence related to this policy and may modify it at a later date based upon the evolution of the published clinical evidence. Should additional scientific studies become available and they are not included in the list, please forward the reference(s) to SWHP so the information can be reviewed by the Medical Coverage Policy Committee (MCPC) and the Quality Improvement Committee (QIC) to determine if a modification of the policy is in order.


