Introduction

Cognitive rehabilitation retrains how a person thinks and makes judgments and decisions. The goal is to reinforce or reestablish behaviors the person previously learned. If the thinking processes can't be relearned, cognitive rehabilitation teaches new ways of processing information. Cognitive rehabilitation may be given by a doctor or a psychologist, or a physical, occupational, or speech therapist. It aims to improve the ability to function at home and in the community. This policy considers cognitive rehabilitation medically necessary for traumatic brain injury. However, high quality medical studies do not show that cognitive rehabilitation improves health results or functioning in cases like stroke, seizure disorders, or multiple sclerosis. For these reasons it is considered investigational (unproven) for conditions other than traumatic brain injury.

Note: The Introduction section is for your general knowledge and is not to be taken as policy coverage criteria. The rest of the policy uses specific words and concepts familiar to medical professionals. It is intended for providers. A provider can be a person, such as a doctor, nurse, psychologist, or dentist. A provider also can be a place where medical care is given, like a hospital, clinic, or lab. This policy informs them about when a service may be covered.
## Policy Coverage Criteria

<table>
<thead>
<tr>
<th>Service</th>
<th>Medical Necessity</th>
</tr>
</thead>
</table>
| Cognitive (neurologic)        | **Medical Necessity**  
| rehabilitation                | Cognitive (neurologic) rehabilitation (as a distinct and definable component of the outpatient rehabilitation process) may be considered medically necessary in the rehabilitation of patients with cognitive impairment due to moderate to severe traumatic brain injury when ALL of the following criteria are met:  
|                               | • The service is ordered by an attending physician and is part of a written plan of care;  
|                               | AND  
|                               | • The service(s) is of such complexity that it can only be safely and effectively performed by a qualified licensed professional such as a physician, a psychologist, physical therapist, occupational therapist, and/or speech therapist;  
|                               | AND  
|                               | • The individual is capable of actively participating in a cognitive outpatient rehabilitation program, as evidenced by mental status demonstrating responsiveness to verbal and visual stimuli and the ability to follow commands and process and retain information;  
|                               | AND  
|                               | • The individual's mental and physical condition prior to the injury indicates there is significant potential for improvement (eg, a complete recovery of pre-injury memory, language or reasoning skills is not required, but there must be a reasonable expectation of improvement that is of practical value to the individual, measured against the individual's condition at the start of the rehabilitation program), and the individual must have no lasting or major treatment impediment that prevents progress such as severe dementia or aphasia;  
|                               | AND  
|                               | • The individual is expected to show measurable functional improvement within a predetermined timeframe from the start of cognitive rehabilitation therapy (goals and expected improvement) are reasonable and achievable and have a positive impact on the individual's daily functioning and quality of life;  

...
Service | Medical Necessity
--- | ---
| timeframes should be addressed prior to the onset of treatment) (see Additional Information below)
| **AND**
| • The treating physician should review the treatment plan periodically to assess the continued need for participation and documented objective evidence of progress.

| Service | Investigational
--- | ---
| Cognitive (neurologic) rehabilitation | Cognitive (neurologic) rehabilitation (as a distinct and definable component of the outpatient rehabilitation process) is considered investigational for all other indications, including, but not limited to:
| • Stroke
| • Postencephalopathy or Toxic encephalopathy
| • Encephalitis
| • Seizure disorders
| • Multiple sclerosis
| • Parkinson’s disease
| • Huntington disease
| • Alzheimer disease
| • Dementia
| • Anoxic brain injury
| • Cognitive deficits due to brain tumor

**Additional Information**
- Duration and intensity of outpatient cognitive (neurologic) rehabilitation therapy programs vary. One approach for comprehensive cognitive rehabilitation is a 16-week outpatient program consisting of 5 hours of therapy a day for 4 days each week. In another approach, cognitive group treatment occurs for three 2-hour sessions each week and three 1-hour individual sessions (total, 9 hours per week). Cognitive rehabilitation programs for specific deficits (eg, memory training or visuo-spatial deficits) may be considered less intensive and generally have 1 or 2 sessions (30 or 60 minutes) a week for 4 to 10 weeks.
Documentation Requirements

The medical records submitted for review should document that medical necessity criteria are met. The record should include clinical documentation of the following:

- History and physical showing member has impaired cognitive function after a moderate to severe traumatic brain injury (TBI)

- And **ALL** of the following:
  - An attending provider ordered cognitive rehabilitation, and the rehabilitation is part of a written plan of care
  - The types of services needed can only be safely and effectively given by a qualified licensed professional such as a physician, a psychologist, physical therapist, occupational therapist, and/or speech therapist
  - The patient receiving the rehabilitation has the mental ability to participate as evidenced by demonstrating responsiveness to verbal and visual stimuli and the ability to follow commands and process and retain information
  - The patient's mental and physical condition before the injury indicate there is significant potential for improvement
  - Goals are set before treatment and measurable improvement is expected within a reasonable timeframe
  - The treating provider should review treatment plan regularly to determine the need for ongoing participation and objectively document evidence of progress

Coding

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPT</td>
<td>Therapeutic interventions that focus on cognitive function (eg, attention, memory, reasoning, executive function, problem solving, and/or pragmatic functioning) and compensatory strategies to manage the performance of an activity (eg, managing time or schedules, initiating, organizing and sequencing tasks), direct (one-on-one) patient contact (new code effective 1/1/18)</td>
</tr>
<tr>
<td>97127</td>
<td>Development of cognitive skills to improve attention, memory, problem solving</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
</tr>
<tr>
<td></td>
<td>(includes compensatory training), direct (one-on-one) patient contact, each 15 minutes (code terminated 1/1/18)</td>
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**HCPCS**

<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
<td>G0515</td>
<td>Development of cognitive skills to improve attention, memory, problem solving (includes compensatory training), direct (one-on-one) patient contact, each 15 minutes (new code effective 1/1/18)</td>
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</tbody>
</table>

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**Related Information**

**Benefit Application**

If the request is for participation in an outpatient comprehensive cognitive (neurologic) rehabilitation program which includes physical therapy, occupational therapy and/or speech therapy, then these requests would be reviewed by Care Management.

If the request is for individual outpatient physical medicine rehabilitation – physical therapy and medical massage therapy and/or occupational therapy and not part of a comprehensive cognitive (neurologic) rehabilitation outpatient program, some plans may require medical necessity review of physical medicine rehabilitation – physical therapy and medical massage therapy by eviCore healthcare based on their evidence-based clinical guidelines. Please contact Customer Service to check the member’s contract.

**Evidence Review**

**Description**

Cognitive rehabilitation is a therapeutic approach designed to improve cognitive functioning after central nervous system insult. It includes an assembly of therapy methods that retrain or alleviate problems caused by deficits in attention, visual processing, language, memory, reasoning, problem solving, and executive functions. Cognitive rehabilitation comprises tasks to
reinforce or reestablish previously learned patterns of behavior or to establish new compensatory mechanisms for impaired neurologic systems. Cognitive rehabilitation may be performed by a physician, psychologist, or a physical, occupational, or speech therapist.

Background

Cognitive rehabilitation is a structured set of therapeutic activities designed to retrain an individual's ability to think, use judgment, and make decisions. The focus is on improving deficits in memory, attention, perception, learning, planning, and judgment. The term cognitive rehabilitation is applied to various intervention strategies or techniques that attempt to help patients reduce, manage, or cope with cognitive deficits caused by brain injury. The desired outcomes are improved quality of life and function in home and community life. The term rehabilitation broadly encompasses reentry into familial, social, educational, and working environments, the reduction of dependence on assistive devices or services, and general enrichment of quality of life. Patients recuperating from traumatic brain injury have traditionally been treated with some combination of physical therapy, occupational therapy, and psychological services as indicated. Cognitive rehabilitation is considered a separate service from other rehabilitative therapies, with its own specific procedures.

Summary of Evidence

For individuals who have cognitive deficits due to traumatic brain injury who receive cognitive rehabilitation delivered by a qualified professional, the evidence includes randomized controlled trials (RCTs), nonrandomized comparison studies, case series, and systematic reviews. Relevant outcomes are functional outcomes and quality of life. The cognitive rehabilitation trials have methodologic limitations and have reported mixed results, indicating there is no uniform or consistent evidence base supporting the efficacy of this technique. Systematic reviews have generally concluded that efficacy of cognitive rehabilitation is uncertain. The evidence is insufficient to determine the effects of the technology on health outcomes.

For individuals who have cognitive deficits due to dementia who receive cognitive rehabilitation delivered by a qualified professional, the evidence includes RCTs, nonrandomized comparison studies, case series, and systematic reviews. Relevant outcomes are functional outcomes and quality of life. Systematic reviews of RCTs have generally shown no benefit of cognitive rehabilitation or effects of clinical importance. One large RCT evaluation a goal-oriented cognitive rehabilitation program reported a significantly less functional decline in 1 of 2
functional scales and lower rates of institutionalization in the cognitive rehabilitation group compared to usual care at 24 months. These results need replication. The evidence is insufficient to determine the effect of the technology on health outcomes.

For individuals who have cognitive deficits due to stroke who receive cognitive rehabilitation delivered by a qualified professional, the evidence includes RCTs and systematic reviews. Relevant outcomes are functional outcomes and quality of life. Four systematic reviews evaluating 3 separate domains of cognitive function (spatial neglect, attention deficit and memory deficit) have shown no benefit of cognitive rehabilitation or effects of clinical importance. The evidence is insufficient to determine the effects of the technology on health outcomes. A 2015 overview of the above and a more recent RCT assessing rehabilitation for poststroke cognitive impairment including the previously noted domains of cognitive function as well as poststroke perceptual disorders, motor apraxia, and executive dysfunction concluded that there was very little high-quality evidence for the effectiveness of cognitive rehabilitation for poststroke cognitive deficits which exists.

For individuals who have cognitive deficits due to multiple sclerosis who receive cognitive rehabilitation delivered by a qualified professional, the evidence includes RCTs and systematic reviews. Relevant outcomes are functional outcomes and quality of life. Systematic reviews of RCTs have shown no significant effects of cognitive rehabilitation on cognitive outcomes. Although numerous RCTs have investigated cognitive rehabilitation in multiple sclerosis, high-quality trials are lacking. The ability to draw conclusions based on the overall body of evidence is limited by the heterogeneity of patient samples, interventions, and outcome measures. Further, results of the available RCTs have been mixed, with positive studies mostly reporting short-term benefits. Evidence for clinically significant, durable improvements in cognition is currently lacking. The evidence is insufficient to determine the effects of the technology on health outcomes.

For individuals who have cognitive deficits due to epilepsy, autism spectrum disorder, postencephalopathy, or cancer who receive cognitive rehabilitation delivered by a qualified professional, the evidence includes RCTs, nonrandomized comparison studies, and case series. Relevant outcomes are functional outcomes and quality of life. The quantity of studies for these conditions is much less than that for the other cognitive rehabilitation indications. Systematic reviews generally have not supported the efficacy of cognitive rehabilitation for these conditions. Relevant RCTs have had methodologic limitations, most often very short lengths of follow-up, that do not permit strong conclusions about efficacy. The evidence is insufficient to determine the effects of the technology on health outcomes.
Ongoing and Unpublished Clinical Trials

Some currently unpublished trials that might influence this review are listed in Table 1.

Table 1. Summary of Key Trials

<table>
<thead>
<tr>
<th>NCT No.</th>
<th>Trial Name</th>
<th>Planned Enrollment</th>
<th>Completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ongoing</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>NCT02265757</td>
<td>Comparative Effectiveness of Behavioral Interventions to Prevent or Delay Dementia (CEBIPPODD)</td>
<td>600</td>
<td>Mar 2018</td>
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<tr>
<td>NCT03306875</td>
<td>Impact of Brain Connectome and Personality on Cognitive Rehabilitation in Multiple Sclerosis</td>
<td>50</td>
<td>Sep 2018</td>
</tr>
<tr>
<td>NCT01138020</td>
<td>Cognitive Rehabilitation of Blast-induced Traumatic Brain Injury</td>
<td>120</td>
<td>Oct 2018</td>
</tr>
<tr>
<td>NCT01788618</td>
<td>Cancer and Disorders of Cognitive Functions and Quality of Life: “Cognitive Rehabilitation in Patients Suffering From Cancer and Treated With Chemotherapy”</td>
<td>168</td>
<td>Dec 2018</td>
</tr>
<tr>
<td>NCT03237676</td>
<td>The Effect of Cognitive Rehabilitation Therapy in Improving Cognitive Function of Attention Following Mild Traumatic Brain Injury</td>
<td>100</td>
<td>Oct 2019</td>
</tr>
<tr>
<td>NCT03215342</td>
<td>Cognitive Rehabilitation in Pediatric Acquired Brain Injury - a Randomized Controlled Trial</td>
<td>80</td>
<td>Jan 2020</td>
</tr>
<tr>
<td>NCT03168360</td>
<td>Effect of Intensive Cognitive Rehabilitation in Subacute Stroke Patient</td>
<td>150</td>
<td>Dec 2021</td>
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</tbody>
</table>

NCT: national clinical trial.

Clinical Input Received from Physician Specialty Societies and Academic Medical Centers

While the various physician specialty societies and academic medical centers may collaborate with and make recommendations during this process, through the provision of appropriate reviewers, input received does not represent an endorsement or position statement by the physician specialty societies or academic medical centers, unless otherwise noted.
**2015 Input**

In response to requests, input was received from 3 physician specialty societies and 5 academic medical centers while this policy was under review in 2015. Input was mixed on cognitive rehabilitation for patients with stroke, multiple sclerosis, brain tumors, or cognitive impairments after previous treatments for cancer.

**2009/2010 Input**

In response to requests, input was received from 2 physician specialty societies and 5 academic medical centers while this policy was under review in 2010. The strongest support was for the use of cognitive rehabilitation as part of the treatment of those with traumatic brain injuries. The level of support varied for other diagnoses (e.g., use in poststroke patients).

**Practice Guidelines and Position Statements**

**American Congress of Rehabilitation Medicine**

Based on a 2013 systematic review, the American Congress of Rehabilitation Medicine recommended process-based cognitive rehabilitation strategies (e.g., attention process training, strategy acquisition and internalization, self-monitoring, corrective feedback) to treat attention and memory deficits in children and adolescents with brain cancers who undergo surgical resection and/or radiotherapy.  

**National Institute for Health and Care Excellence**

National Institute for Health and Care Excellence guidance (2013) on stroke rehabilitation recommended cognitive rehabilitation for visual neglect and memory and attention deficits that impact function. Interventions should focus on relevant functional tasks (e.g., “errorless learning”) and “elaborative techniques” (e.g., “mnemonics,” “encoding” strategies) for memory impairments.
Institute of Medicine

The Institute of Medicine (IOM) published a report in 2011 on cognitive rehabilitation for traumatic brain injury that included a comprehensive review of the literature and recommendations. The report concluded that “current evidence provides limited support for the efficacy of CRT [cognitive rehabilitation therapy] interventions. The evidence varies in both the quality and volume of studies and therefore is not yet sufficient to develop definitive guidelines for health professionals on how to apply CRT in practice.” The report recommended that standardization of clinical variables, intervention components, and outcome measures was necessary to improve the evidence base for this treatment. IOM also recommended future studies with larger sample sizes and more comprehensive sets of clinical variables and outcome measures.

Veterans Administration

The Veterans Administration/Department of Veterans Affairs published guidelines on the treatment of concussion and mild traumatic brain injury (mTBI) in 2009, which were updated in 2016. These guidelines addressed cognitive rehabilitation in the setting of persistent symptoms. The 2016 guidelines state:

Individuals with a history of mTBI who present with symptoms related to memory, attention, and/or executive function problems that do not resolve within 30 to 90 days and have been refractory to treatment for associated symptoms should be referred as appropriate to cognitive rehabilitation therapists with expertise in TBI rehabilitation. The Work Group suggests considering a short-term trial of cognitive rehabilitation treatment to assess the individual patient responsiveness to strategy training, including instruction and practice on use of memory aids, such as cognitive assistive technologies (AT). A prolonged course of therapy in the absence of patient improvement is strongly discouraged.

The strength of the recommendation was rated as weak.

The Department of Veterans Affairs and the Department of Defense clinical practice guidelines on the management of stroke rehabilitation (endorsed by the Stroke Council of the American Heart Association and the American Stroke Association) recommended that individuals recovering from stroke be assessed for cognitive deficits and that cognitive retraining be provided for those with attention deficits, visual neglect, memory deficits, executive function, and problem-solving difficulties. The publication concluded:
There is support for cognitive remediation of deficits in both the acute and post-acute phases of recovery from stroke and TBI, although some of the improvements were relatively small and task specific. Some benefits were specific to the TBI population, although it seems reasonable to extend some of these results to the stroke population (Management of Stroke Rehabilitation Working Group, 2010).

**Medicare National Coverage**

There is no national coverage determination (NCD). In the absence of an NCD, coverage decisions are left to the discretion of local Medicare carriers.

**Regulatory Status**

Cognitive rehabilitation is not subject to regulation by the U.S. Food and Drug Administration.

**References**


**History**

<table>
<thead>
<tr>
<th>Date</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>01/01/18</td>
<td>New policy, approved December 12, 2017, effective April 4, 2018. This policy was previously archived but it is now being reinstated. Outpatient cognitive (neurologic) rehabilitation is considered medically necessary in the rehabilitation of patients with cognitive impairment due to traumatic brain injury; it is considered investigational for all other indications.</td>
</tr>
<tr>
<td>05/01/18</td>
<td>Annual Review, approved April 18, 2018. Policy updated with literature review through January 2018; no references added. Policy statements unchanged. Title updated from “Cognitive (Neurologic) Rehabilitation” to “Cognitive (Neurologic) Rehabilitation in the Outpatient Setting”.</td>
</tr>
<tr>
<td>06/07/18</td>
<td>Minor update. Clarified language in the Benefit Application section.</td>
</tr>
</tbody>
</table>

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Email AppealsDepartmentInquiries@Premera.com

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U.S. Department of Health and Human Services
200 Independence Avenue SW, Room 509F, HHH Building
Washington, D.C. 20201, 1-800-368-1019, 800-537-7697 (TDD)

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