



CIGNA MEDICAL COVERAGE POLICY

The following Coverage Policy applies to all plans administered by CIGNA Companies including plans administered by Great-West Healthcare, which is now a part of CIGNA.

Effective Date 12/15/2008
Next Review Date.....7/15/2009
Coverage Policy Number0124

Subject **Cognitive Rehabilitation**

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Hyperlink to Related Coverage Policies

Attention-Deficit/Hyperactivity Disorder(ADHD): Assessment and Treatment
Autism Spectrum Disorders/Pervasive Developmental Disorders: Assessment and Treatment
Neuropsychological Testing
Sensory Stimulation for Patients in Coma or Persistent Vegetative State

INSTRUCTIONS FOR USE

Coverage Policies are intended to provide guidance in interpreting certain **standard** CIGNA HealthCare benefit plans as well as benefit plans formerly administered by Great-West Healthcare. Please note, the terms of a participant's particular benefit plan document [Group Service Agreement (GSA), Evidence of Coverage, Certificate of Coverage, Summary Plan Description (SPD) or similar plan document] may differ significantly from the standard benefit plans upon which these Coverage Policies are based. For example, a participant's benefit plan document may contain a specific exclusion related to a topic addressed in a Coverage Policy. In the event of a conflict, a participant's benefit plan document **always supercedes** the information in the Coverage Policies. In the absence of a controlling federal or state coverage mandate, benefits are ultimately determined by the terms of the applicable benefit plan document. Coverage determinations in each specific instance require consideration of 1) the terms of the applicable group benefit plan document in effect on the date of service; 2) any applicable laws/regulations; 3) any relevant collateral source materials including Coverage Policies and; 4) the specific facts of the particular situation. Coverage Policies relate exclusively to the administration of health benefit plans. Coverage Policies are not recommendations for treatment and should never be used as treatment guidelines. Proprietary information of CIGNA. Copyright ©2008 CIGNA

Coverage Policy

Under some benefit plans, coverage for cognitive rehabilitation is subject to the term, conditions and limitations of the applicable benefit plan's Short Term Rehabilitative Therapy benefit and schedule of copayments. Some benefit plans include a maximum allowable benefit for duration of treatment or number of visits. When the maximum allowable benefit is exhausted, coverage will no longer be provided, even if the medical necessity criteria described below are met. Please refer to the applicable benefit plan document to determine benefit availability and terms, conditions and limitations of coverage.

If coverage for cognitive rehabilitation is available, the following conditions of coverage apply.

CIGNA covers an individualized program of cognitive rehabilitation as medically necessary following a traumatic brain injury, acute brain insult, or cerebrovascular accident (CVA) when ALL of the following requirements are met:

- A documented cognitive impairment with compromised functional status exists.
- The individual can actively participate in the treatment plan.

- Significant cognitive improvement is expected and can be demonstrated by documentation submitted on a weekly basis.

Note: Outpatient cognitive rehabilitation programs are appropriate for many individuals. Coverage is limited to outpatient programs unless the individual otherwise meets medical necessity criteria for an inpatient stay. Cognitive rehabilitation in the home is indicated only if the individual meets medical necessity criteria for care in the home. In addition, many benefit plans specifically exclude vocational rehabilitation and services that are for training or are educational in nature. Coverage would therefore not be provided if these components are the primary focus of a cognitive rehabilitation program.

CIGNA does not cover cognitive rehabilitation for the following conditions because it is considered experimental, investigational or unproven for these indications (this list may not be all-inclusive):

- dementia (e.g., human immunodeficiency virus [HIV] dementia, Alzheimer's disease)
- cerebral palsy
- attention deficit disorder, attention deficit hyperactivity disorder
- schizophrenia
- pervasive developmental disorders, including autism
- learning disabilities
- developmental delay
- mild traumatic brain injury

General Background

Cognitive rehabilitation is a systematic, goal-oriented treatment program designed to improve cognitive functions and functional abilities, and increase levels of self-management and independence following neurological damage to the central nervous system. Although the specific tasks are individualized to patients' needs, treatment generally emphasizes restoring lost functions; teaching compensatory strategies to circumvent impaired cognitive functions; and improving competence in performing instrumental activities of daily living (IADL) such as managing medications, using the telephone and handling finances. Cognitive rehabilitation has been postulated to lead to maintenance or improvement in language, memory and other cognitive abilities in neurologically impaired individuals.

There are two treatment approaches to cognitive rehabilitation. The restorative approach is based on the theory that repetitive exercise can restore lost functions. Restorative cognitive rehabilitation (RCR) targets internal cognitive processes with a goal of generalizing improvements in real-world environments. Techniques include auditory, visual and verbal stimulation and practice, number manipulation, computer-assisted stimulation and practice, performance feedback, reinforcement, video feedback and meta-cognitive procedures such as behavior modification (Agency for Healthcare Research and Quality [AHRQ], 1999).

The second rehabilitation model, the compensatory approach, strives to develop external prosthetic assistance for dysfunctions. Compensatory cognitive rehabilitation (CCR) does not rely on the ability to generalize learning or restore lost abilities. CCR employs visual cues, written instructions, memory notebooks, watches, beepers, computers and other electronic devices to trigger behavior. Therapists simplify complex tasks, capture the patient's attention, minimize distractions and teach self-monitoring procedures. This approach encourages and reinforces an individual's remaining strengths with the goal of achieving or maintaining independence. The compensatory approach to cognitive rehabilitation has been more widely accepted than the restorative approach, but these techniques are not mutually exclusive. Many therapeutic programs employ both techniques.

Prior to initiation of a cognitive rehabilitation program, patients often undergo comprehensive neuropsychological testing to evaluate and identify specific baseline deficits and impairments as well as to direct a treatment plan and develop measurable goals.

Interventions

There is substantial variation in the delivery of cognitive rehabilitation with respect to essential components, program design and emphasis. A variety of cognitive rehabilitation interventions with variably proven efficacy

have been used in the treatment of patients with cognitive deficits. Some of these interventions include cognitive or academic exercises, computer-assisted training, compensatory technique training, behavior modification, vocational rehabilitation, comprehensive interdisciplinary models, and communication skill training. Evidence from randomized controlled trials and case reports supports the use of computer-aided cognitive rehabilitation (CACR) in traumatic brain injury (TBI) patients to improve immediate recall on neuropsychological testing, but the clinical importance of this finding has not been validated (Agency for Healthcare Policy and Research, 1998). Improved performance on neuropsychological testing has not been demonstrated to correlate with improved levels of cognitive functioning or patient autonomy. The use of a comprehensive interdisciplinary model is commonly used in patients with TBI. The primary focus of many components of a cognitive rehabilitation program is education and training.

Cognitive rehabilitation interventions should be structured, systematic, goal-directed (long- and short-term goals), individualized and restorative. There is no evidence in the medical literature to support a specific treatment intensity or duration for cognitive rehabilitation. Mandating a minimum number of hours of applied therapy for TBI patients is not supported by the present state of scientific knowledge. How much of which intervention optimizes recovery in a given type of patient has not been adequately studied (AHRQ, 1999). The same lack of evidence exists for cognitive rehabilitation for cerebrovascular accidents (CVA). Cognitive rehabilitation should be evaluated on the basis of goal achievement, including quantifiable rates of improvement in functional abilities and documented treatment outcomes. Contraindications to cognitive rehabilitation include the inability of the patient to participate in a treatment plan (i.e., orthopedic, medical, psychosocial or behavioral issues). Cognitive rehabilitation often involves the services of a multidisciplinary team. Services may be provided by speech/language pathologists, occupational therapists, psychiatrists, neuropsychologists, psychiatric nurses, and cognitive remediation therapists.

Traumatic Brain Injury (TBI)

Although the evidence supporting cognitive rehabilitation for TBI is not robust, there is some evidence suggesting that it may improve functional outcomes for some patients with TBI. According to the National Institutes of Health (NIH) Consensus Development Panel on Rehabilitation of Persons with TBI (1999), limited data on the effectiveness of cognitive rehabilitation programs are available because of the heterogeneity of subjects, interventions and outcomes studied. In some studies, outcome measures are inconsistent, making it difficult to compare across studies. In addition, existing studies have been limited by small sample size, failure to control for spontaneous recovery, and the unspecified confounding effects of social contact. Evidence from available studies indicates that compensatory cognitive rehabilitation may reduce anxiety and improve self-concept and relationships for people with TBI. In addition, cognitive exercises, including computer-assisted strategies, have been used to improve specific neuropsychological processes, including memory, attention and executive skills. Some studies support the use of computer-assisted exercises. Compensatory devices, such as memory books and electronic paging systems, are used to improve specific cognitive functions and compensate for deficits. Training to use these devices requires structured, repetitive practice.

Salazar et al. (2000) randomly assigned 120 active-duty military personnel who had sustained a moderate-to-severe closed head injury to an intensive eight-week inpatient cognitive rehabilitation program or a limited home rehabilitation program that included weekly telephone support from a psychiatric nurse. Outcome measures used included return to gainful employment and fitness for military duty at a one-year follow-up. The authors concluded that the overall benefit of in-hospital cognitive rehabilitation for patients with moderate-to-severe TBI was similar to that of home rehabilitation. Ninety percent of the hospital group was able to return to work compared to 94% of the home group. Fitness for active military duty was 73% for the hospital group and 66% for the home group. Patient-selection criteria (relatively young, previously healthy, well-oriented military personnel) make it difficult to generalize these findings to a broader population.

Cicerone (2004) conducted a nonrandomized, controlled intervention trial (n=56) to evaluate the effectiveness of an intensive cognitive rehabilitation program (ICRP) (n=27) compared to a standard neuro-rehabilitation program (SRP) (n=29) for patients with TBI. The outcome measure was the Community Integration Questionnaire (CIQ) and Quality of Community Integration Questionnaire assessing satisfaction with community functioning and cognitive functioning. Both groups showed significant improvement on the CIQ. The ICRP group exhibited a significant treatment effect compared to the SRP group. The ICRP patients were more than twice as likely to show clinically significant improvement in community integration.

Cerebrovascular Accident (CVA)/Stroke

Patients who sustain a stroke/CVA may exhibit symptoms similar to those experienced by TBI patients, with cognitive deficits in the areas of memory, reasoning and perception. Both TBI and stroke may result in impaired function of localized, higher-order, sensory and motor function corresponding to affected anatomic structures, but may also result in loss of a variety of functions that are not clearly localized, such as the ability to abstract and to reason. Stroke rehabilitation should be initiated as soon as possible after diagnosis.

The evidence supporting the use of cognitive rehabilitation to treat cognitive deficits following stroke is not robust. However, the medical community has recognized cognitive rehabilitation as a standard treatment modality for this indication. Three Cochrane reviews have evaluated the effectiveness of cognitive rehabilitation following stroke. A Cochrane review by Lincoln and colleagues (2001) evaluated the use of cognitive rehabilitation for attention deficits following stroke indicated that cognitive rehabilitation may improve alertness and sustained attention, although the evidence could not support or refute its use to improve functional independence. A second Cochrane review (Bowen et al., 2007) on cognitive rehabilitation for spatial neglect following stroke concluded that “rehabilitation specifically targeted at neglect appeared to improve a person’s ability to complete tests such as finding visual targets and marking the mid-point of a line. However, its effect on their ability to carry out a meaningful everyday task or to live independently was not clear” (Bowen et al., 2007). In a Cochrane review to evaluate the effectiveness of cognitive rehabilitation for memory problems following stroke, Nair and Lincoln (2007) found only two trials involving 18 patients and determined there was not enough evidence to support or refute the effectiveness of cognitive rehabilitation for memory problems following stroke and that further well-designed studies are needed.

Literature Review: Studies Evaluating Multiple Indications

Cappa et al. (2005), as members of the Task Force on Cognitive Rehabilitation under the auspices of the European Federation of Neurological Societies (EFNS), reported on the effectiveness of cognitive rehabilitation in stroke and traumatic brain injury (TBI). Each member of the task force was assigned an area of cognitive rehabilitation and researched the current literature. The goal was to evaluate the existing evidence and provide recommendations for neurological practice. The task force collected substantial evidence to make recommendations regarding some forms of cognitive rehabilitation in patients with neuropsychological deficits in the post-acute phase of stroke and TBI. A grade A, B, or C recommendation was given to those areas of cognitive rehabilitation based on the evidence available. The areas addressed were: aphasia, unilateral spatial neglect (ULN), attention disorders following TBI, memory and apraxia. The Task Force recommendations were as follows: aphasia therapy received a B recommendation; ULN received an A recommendation for visual scanning and visio-spatio-motor training and B/C recommendations for other areas of ULN therapy; attention disorders were given an A in the post-acute phase; the use of memory strategies without electronic aid received a C; errorless learning a B; nonelectronic external memory aids (diaries, notebooks) received a C; electronic external memory devices (computers, pagers) received a B; virtual memory training was given a C; apraxia treatment with compensatory strategies received an A recommendation. The task force determined that there is clearly a need for large-scale, randomized clinical trials to evaluate methodologies of intervention in common clinical conditions. The task force suggested that the quality of rehabilitation studies regarding stroke and TBI would improve once better clinical and pathological distinctions between the diagnoses were made.

Cicerone et al. (2005) performed a summary of the Brain Injury Interdisciplinary Special Interest Group of the American Congress of Rehabilitation Medicine’s recently published updated review, including recommendations regarding cognitive rehabilitation based on literature published from 1998 through 2002. The article mainly described Class I studies (well-organized, prospective, randomized clinical trials) but also discussed Class II studies (prospective, nonrandomized cohort studies, retrospective nonrandomized case-control studies, or multiple baseline studies that demonstrated direct comparison of treatment conditions) and Class III studies (clinical series without concurrent controls or single subject designs with adequate quantification and analysis) when they provided unique or contradictory information. The updated review consisted of 17 Class I studies, including a total of 291 patients with TBI and 247 patients with stroke. Sixteen of these studies provided evidence supporting the effectiveness of cognitive rehabilitation. According to the authors, the 10 studies that addressed stroke supported remediation for visual inattention and apraxia and interventions for communication deficits in patients with stroke, and the seven studies that addressed TBI supported effective rehabilitation of attention, memory and executive functioning deficits in patients with TBI utilizing strategy training (training patients to compensate for deficits rather than trying to eliminate the underlying impairment). There was substantial evidence to support several of the initial recommendations, make several new recommendations and modify some of the recommendations. The article concluded that there is now a large body of evidence that supports the benefits of cognitive rehabilitation in stroke and TBI patients and that it is time to move from

questioning the effectiveness of cognitive rehabilitation to making a determination as to the therapeutic factors and patient characteristics that will optimize the clinical outcomes associated with it.

Mild Traumatic Brain Injury

The World Health Organization Collaborating Centre Task Force on Mild Traumatic Brain Injury recently expanded the definition of mild traumatic brain injury (TBI), '[as] an acute brain injury resulting from mechanical energy to the head from external physical forces. Operational criteria for clinical identification include: (i) one or more of the following: confusion or disorientation, loss of consciousness for 30 minutes or less, post-traumatic amnesia for less than 24 hours and/or other transient neurological abnormalities such as focal signs, seizure and intracranial lesion not requiring surgery; (ii) a Glasgow Coma Scale score of 13–15 after 30 minutes post-injury or later upon presentation for healthcare' (Ponsford, 2005). There is evidence in the literature to suggest that the majority of mild traumatic brain injury cases involving cognitive deficits are self-limiting, resolving within six months of injury without any intervention. Levin et al. (1987) found that neurobehavioral impairment, self-reported cognitive problems, somatic complaints and emotional malaise observed in a mild TBI group at one-week post-injury typically resolved by three months. Based on a review of the published, peer-reviewed medical literature, there is insufficient evidence to support the use of cognitive rehabilitation for mild TBI. The role of cognitive rehabilitation in the management of patients with mild TBI has not been established.

Ponsford (2005) found mild TBI constitutes 70–90% of all treated head injuries, occurring most frequently in young males and resulting from falls, motor vehicle accidents and sports-related injuries. In a review of current management and rehabilitation of mild traumatic brain injury, the author reported that symptoms and cognitive impairments associated with sports-related concussions usually resolved within two weeks, whereas other groups of TBI demonstrated a more variable timeframe. In most cases, symptoms generally resolved within three months. However, 15–25% of these cases have persistent difficulties, sometimes resulting in significant ongoing disability and adjustment problems. The author stated that there is a need for a more uniform standard of assessment and management, but that the lack of research made the treatment of mild TBI highly variable. The author concluded that "larger randomized controlled studies with careful definition and measurement of all variables and prospective monitoring are needed to provide solid evidence on which to base management guidelines for both adults and children."

Dementia

Dementia is the development of cognitive impairments that diminish social, occupational, and intellectual abilities. It can be grouped into four major categories: degenerative (Alzheimer's disease, Parkinson's disease, Huntington's disease), vascular (following stroke), infectious (HIV Type-1 associated dementia), and metabolic diseases (Wilson's disease) (Small and Mayeux, 2005). In a Cochrane review (2007), Clare and Woods reported on the effectiveness of cognitive training (guided practice on a set of tasks that reflect particular cognitive functions) and cognitive rehabilitation (developing strategies and methods of compensating based on individual needs and goals) interventions on patients with Alzheimer's disease and vascular dementia. Nine randomized controlled trials (RCTs) were identified for cognitive training, and no RCTs were identified for cognitive rehabilitation. The authors reported no significant differences between cognitive training and control were found. In conclusion, the authors stated that, based on the evidence reviewed, there was no evidence supporting the efficacy of cognitive training and insufficient evidence to evaluate the effectiveness of cognitive rehabilitation in Alzheimer's disease and vascular dementia.

In a meta-analysis of the literature regarding cognitive training (CT) and Alzheimer's disease, Sitzer et al. (2006) reviewed 19 controlled trials, 14 of which were RCTs. The authors used Cohen's description of effect size magnitude (0.2=small, 0.5=medium, 0.8=large) to measure outcomes. A small effect size for CT in general was reported but, more specifically, there were negative or minimal effects on visuospatial functioning and language, small effects on motor speed and visual learning, medium effects on executive functioning, and large effects on verbal and visual learning. The authors did note that the large effect size for verbal and visual learning was the result of one study and not aggregate scores. Only a few studies reported follow-up data suggesting that gains may be maintained an average of 4.5 months after discontinuing treatment. Many limitations in the studies were identified such as: the limited number of well-controlled studies, small sample sizes, and the variable outcome measures and techniques used. The authors concluded that CT may improve the cognitive and functional abilities of patients with Alzheimer's disease, but further research is needed, including effectiveness studies in various settings and the use of performance-based measures to evaluate the effects of treatment on daily functioning.

Schizophrenia

Schizophrenia is a severe and persistent debilitating psychiatric disorder that affects approximately 1% of the world's population. It is characterized by disturbances in perception, cognition, mood, thought process, expression of language, and relationships with others. Symptoms can include delusions, hallucinations, and thought disorder. Neuropsychiatric changes often include impairments in information processing (Frankenburg, 2007).

A number of cognitive rehabilitation approaches have been proposed to address the issue of cognitive impairment such as: attention process training, integrated psychological therapy, cognitive enhancement therapy, neurocognitive enhancement therapy, cognitive remediation therapy, the neuropsychological educational approach to remediation, errorless learning approaches, and attention shaping. Each approach shares the goal of enhancing cognitive processes or circumventing cognitive impairments in an effort to improve functional outcomes (Velligan et al., 2006).

McGurk et al. (2007) conducted a meta-analysis of 26 randomized controlled trials that evaluated the effects of cognitive remediation on cognitive performance, symptoms and psychosocial functioning in 1,151 patients with schizophrenia. The authors reported a medium effect size for cognitive performance (0.41), a slightly smaller effect size for psychosocial functioning (0.36), and a small effect size for symptoms (0.28). According to the authors, the impact of cognitive remediation on function was moderated by several factors including the addition of adjunctive psychiatric rehabilitation, cognitive training method, and patient age. They also noted there was a lack of data regarding long term effects as only six studies examined if results were maintained at a posttreatment follow-up (average of eight months). The authors concluded that cognitive remediation may have a moderate effect on cognitive performance and when combined with psychiatric rehabilitation, may improve functional outcomes. Retention of benefit beyond eight months was not explored.

Wykes et al. (2007b) conducted a single-blind randomized controlled trial of 40 young early onset patients with schizophrenia to evaluate the efficacy of cognitive remediation therapy (CRT) in alleviating cognitive deficits compared to treatment as usual. Twenty-one patients received CRT and 19 received standard care. Primary outcome measures included: cognitive flexibility (measured on the Wisconsin Cars Sort Test [WCST]), memory (measured on Digit Span), planning (measured on the Modified Six Elements Test). Secondary outcomes included: symptoms, social contacts and self-esteem. Assessments took place at baseline, post-treatment (week 14) and follow-up (week 28). The only measure that reached statistical significance when compare to the standard care group was the WCST scores ($p = 0.04$). The authors stated that larger trials that evaluate the long-term maintenance of the effects of CRT are warranted.

Wykes et al. (2007a) conducted a randomized controlled trial to evaluate if cognitive remediation improved cognition in people with schizophrenia. Eighty-five participants with schizophrenia and cognitive difficulties were randomized to 40 sessions of cognitive remediation ($n=43$) or treatment as usual ($n=42$). Outcome measures included working memory, cognitive flexibility, and planning. Evaluations took place at 1, 14, and 40 weeks. For working memory, 21 in the therapy group and 18 in the control group had abnormal working memory scores at baseline. After the intervention, the authors reported a significant advantage to the therapy group at the 14-week post-therapy assessment ($p=0.037$), but at the time of the 40-week follow-up, there was no longer any statistical significance ($p=0.10$). There was no difference between the two groups for cognitive flexibility, and there was no statistically significant difference at any point in time for planning. The authors noted that there was a significant group by medication interaction, suggesting that medications may hinder or enhance the effects of cognitive remediation. Methodological considerations, according to the authors, included: some improvement may have been due to increased social interaction, medications may have affected the outcomes, blinding was not maintained, and the sample size was small. Although most of the improvements did not obtain statistical significance, the authors stated that cognitive improvement was noted in many areas.

Velligan et al. (2006) conducted a literature review to examine research findings on the eight evidence-based approaches to cognitive rehabilitation, as listed in the 2005 Training Grid Outlining Best Practices for Recovery and Improved Outcomes for People with Serious Mental Illness, developed by the American Psychological Association Committee for the Advancement of Professional Practice, for patients with schizophrenia. The eight approaches included: attention process training, integrated psychological therapy, cognitive enhancement therapy, neurocognitive enhancement therapy, cognitive remediation therapy, the neuropsychological educational approach to remediation, errorless learning approaches, and attention shaping. According to the authors, the studies that were included varied considerably in areas such as criteria for study inclusion, the

conceptual organization of studies, and interpretation of findings. The authors stated that few approaches had more than three data-based studies supporting their efficacy in schizophrenia and that there are no agreed upon guidelines for levels of intensity or duration of training. The authors concluded that the findings of this review were not uniformly positive but encouraging, which is what they would expect at this stage of cognitive rehabilitation development.

In a Cochrane review conducted by Hayes and colleagues (2002), no trial derived evidence that would support a position for or against cognitive rehabilitation as a treatment for schizophrenia was found.

Other Etiologies of Impaired Cognitive Function

Cognitive rehabilitation has been proposed for numerous conditions that cause impaired cognitive function, including:

- dementia (including HIV dementia)
- cerebral palsy
- attention deficit disorder, attention deficit hyperactivity disorder
- pervasive developmental disorders, including autism
- learning disabilities
- developmental delay

There is insufficient evidence in the published, peer-reviewed, medical literature to support the use of cognitive rehabilitation for these conditions.

Spontaneous Recovery and Early Intervention

Early rehabilitation intervention following neurological insult plays an important role in overall functional outcomes. It is widely accepted that early initiation of rehabilitation following brain insult improves both the speed of recovery and the final net health outcome. It has been suggested that there are critical periods during which interventions must occur to produce maximum benefit. Studies that have measured the impact of the early initiation of therapy on overall outcomes have found that early intervention has resulted in higher Rancho Los Amigos levels at discharge for rehabilitation. It has also been suggested that many patients who experience brain injury will improve on the basis of their own efforts, without professional intervention. Many studies that have reported on the effectiveness of cognitive rehabilitation are uncontrolled, making it difficult to distinguish improvements due to cognitive rehabilitation from improvements that result from natural recovery or self-administered rehabilitation.

Professional Societies/Organizations

The National Institute of Neurological Disorders and Stroke (NINDS) (2005) reported that to improve the quality of life of neurologically-impaired patients, a systematic linkage between diagnosis and intervention must be established. The NINDS sponsored a workshop made up of three interdisciplinary teams to establish a guideline for accelerated progress in cognitive rehabilitation interventions for stroke, traumatic brain injury and brain tumor patients. The following are a few of the recommendations suggested by the research teams: develop tools that are standardized, sensitive and reliable to assess deficits and predict outcomes; develop a step-wise implementation plan for interventions once they are established; and develop a more appropriate clinical trials model specifically for brain tumor, stroke and TBI populations.

The Stroke Council of the American Heart Association endorsed the Veterans Administration/Department of Defense guidelines for stroke rehabilitation published in 2005. The panel was made up of experts from the Department of Veterans Affairs and the United States Department of Defense. The panel evaluated published literature through 2002. Recommendations were based on randomized clinical trials, uncontrolled studies, or consensus expert opinion if definitive data were lacking. The guidelines were developed as a means of direction for clinicians and also to assist researchers in identifying areas in need of further investigation. In the area of cognitive rehabilitation, the recommendation was that all patients be assessed for cognitive deficits and be given retraining if any of the following conditions were present: attention deficit, visual neglect, memory deficits, and executive function and problem-solving difficulties.

The National Academy of Neuropsychology (NAN) (2002) made an official statement in support of cognitive rehabilitation techniques that are directed to achieve functional changes by reinforcing, strengthening, or

reestablishing previously learned patterns of behavior, or establishing new patterns of cognitive activity or compensatory mechanisms for impaired neurological systems in individuals with acquired brain injuries.

Summary

Individualized, structured cognitive rehabilitation programs are effective in facilitating recovery in selected patients with traumatic head injury, acute brain insult or stroke. There is insufficient evidence, however, to support the use of cognitive rehabilitation for the treatment of mild traumatic brain injury. Cognitive rehabilitation has also been proposed for numerous other conditions that cause impaired cognitive function, including dementia, cerebral palsy, attention deficit disorder, schizophrenia, pervasive developmental disorders, learning disabilities and developmental delay. There is insufficient evidence in the published medical literature to support the use of cognitive rehabilitation for these conditions.

Coding/Billing Information

Note: This list of codes may not be all-inclusive.

Covered when medically necessary:

CPT [®] * Codes	Description
97532	Development of cognitive skills to improve attention, memory, problem solving (includes compensatory training), direct (one-on-one) patient contact by the provider, each 15 minutes

ICD-9-CM Diagnosis Codes	Description
	Multiple/varied

Experimental/Investigational/Unproven/Not Covered:

CPT* Codes	Description
	No specific codes

HCPCS Codes	Description
	No specific codes

ICD-9-CM Diagnosis Codes	Description
294.10	Dementia in conditions classified elsewhere without behavioral disturbance
294.11	Dementia in conditions classified elsewhere with behavioral disturbance
294.8	Other persistent mental disorders due to conditions classified elsewhere
295.00 – 295.95	Schizophrenic disorders
299.00 – 299.91	Pervasive developmental disorders
314.00	Attention deficit disorder without mention of hyperactivity
314.01	Attention deficit disorder with hyperactivity
315.0-315.9	Specific delays in development
343.0-343.9	Infantile cerebral palsy
850.0	Concussion with no loss of consciousness
850.11	Concussion with loss of consciousness of 30 minutes or less
	Multiple/varied

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Policy History

<u>Pre-Merger Organizations</u>	<u>Last Review Date</u>	<u>Policy Number</u>	<u>Title</u>
CIGNA HealthCare	7/15/2008	0124	Cognitive Rehabilitation

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