**National Medical Policy**

**Subject:** Cognitive Rehabilitation Post Traumatic Brain Injury (TBI)

**Policy Number:** NMP129

**Effective Date:** April 2004

**Updated:** February 2016

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This National Medical Policy is subject to the terms in the IMPORTANT NOTICE at the end of this document

For Medicaid Plans: Please refer to the appropriate State’s Medicaid manual(s), publication(s), citation(s), and documented guidance for coverage criteria and benefit guidelines prior to applying Health Net Medical Policies.

**The Centers for Medicare & Medicaid Services (CMS)**

For Medicare Advantage members please refer to the following for coverage guidelines first:

<table>
<thead>
<tr>
<th>Use</th>
<th>Source</th>
<th>Reference/Website Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Coverage Determination (NCD)</td>
<td></td>
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</tr>
<tr>
<td>National Coverage Manual Citation</td>
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<tr>
<td>Local Coverage Determination (LCD)*</td>
<td></td>
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<tr>
<td>Article (Local)*</td>
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</tbody>
</table>


None Use Health Net Policy

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Instructions

- Medicare NCDs and National Coverage Manuals apply to ALL Medicare members in ALL regions.
- Medicare LCDs and Articles apply to members in specific regions. To access your specific region, select the link provided under “Reference/Website” and follow the search instructions. Enter the topic and your specific state to find the coverage determinations for your region. *Note: Health Net must follow local coverage determinations (LCDs) of Medicare Administration Contractors (MACs) located outside their service area when those MACs have exclusive coverage of an item or service. (CMS Manual Chapter 4 Section 90.2)
• If more than one source is checked, you need to access all sources as, on occasion, an LCD or article contains additional coverage information than contained in the NCD or National Coverage Manual.
• If there is no NCD, National Coverage Manual or region specific LCD/Article, follow the Health Net Hierarchy of Medical Resources for guidance.

Current Policy Statement

Inpatient Rehabilitation
Hospital/Acute Rehabilitation/SNF Rehabilitation

Health Net, Inc. considers up to 3 hours per week of cognitive rehabilitation medically necessary if it is a component of an inpatient, multidisciplinary rehabilitation program following a traumatic brain injury (TBI) when all of the following are met:

1. Patient meets criteria for inpatient admission to a rehabilitation facility
2. Patient requires intensive interdisciplinary services for at least 3 hours per day, 5-7 days per week, of at least 2 different types of therapy (e.g. physical therapy, occupational therapy, speech therapy, cognitive rehabilitation, or pulmonary rehabilitation); and
3. Specific short- and long-term goals, as well as anticipated discharge date, are documented; and
4. Injury has occurred no more than 6 months from date of the request; and
5. Patient is responsive to verbal or visual stimuli* and demonstrates the ability or potential to make progress and achieve set goals; and
6. Absence of substance abuse issues or acute psychiatric disorders; and
7. For TBI, patient has a Rancho Los Amigos Level of Cognitive Function Scale level of 3 and evolving response, or Ranchos level 4 – 6. (see table below)

*Note: Patients who have no response to stimuli, a generalized response to stimuli which is inconsistent or non-purposeful, and/or reactions to stimuli which are delayed or non-specific are not appropriate candidates for cognitive rehabilitation care.

Note: Health Net, Inc. does not consider admission and/or continued stay at an inpatient hospital, acute rehabilitation program or skilled nursing facility (SNF) medically necessary SOLELY for cognitive rehabilitation after TBI.

Discharge Criteria from Inpatient Rehabilitation

Patient meets any of the criterion listed below:

1. The patient has met documented treatment plan goals; or
2. The patient has reached a maximum functional level, a plateau; or
3. The patient is regressing, demonstrated by the lack of measurable progress towards set goals for at least 1 week; or
4. The multidisciplinary team feels there is no reasonable expectation of progress despite treatment planning changes AND there is no current acute illness to account for this lack of progress; or
5. The person voluntarily terminates from the program; or
6. Patient fails to comply with the treatment program, or attendance in therapies is insufficient, to the extent that treatment is not beneficial and compliance is not improved after staff counseling; or
7. The physician discontinues treatment
<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
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<tbody>
<tr>
<td>I</td>
<td>No Response Unresponsive to all stimuli</td>
</tr>
<tr>
<td>II</td>
<td>Generalized Inconsistent, non-purposeful, nonspecific reaction to stimuli. Responds to pain but response may be delayed.</td>
</tr>
<tr>
<td>III</td>
<td>Localized Inconsistent reaction directly related to type of stimulus presented. Responds to some commands. May respond to discomfort.</td>
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<tr>
<td>IV</td>
<td>Confused Disoriented and unaware of present. Agitated events with frequent bizarre and inappropriate response behavior. Attention span is short and ability to process information is impaired.</td>
</tr>
<tr>
<td>V</td>
<td>Confused Non-purposeful random or fragmented responses when task complexity exceeds abilities. Patient appears alert and responds to simple commands. Performs previously learned tasks but is unable to learn new ones.</td>
</tr>
<tr>
<td>VI</td>
<td>Confused Behavior is goal-directed. Responses are appropriate to the situation with incorrect responses due to memory difficulties.</td>
</tr>
<tr>
<td>VII</td>
<td>Automatic, Correct routine responses, which are robot-like. Appears oriented to setting but insight, judgment and problem solving are poor.</td>
</tr>
<tr>
<td>VIII</td>
<td>Purposeful and Consistently oriented to person, place and time. Able to recall and integrate past and recent events. Depressed, irritable, low frustration tolerance, easily angered and argumentative.</td>
</tr>
<tr>
<td>IX</td>
<td>Purposeful and Independently shifts back and forth between tasks and completes them accurately for at least two consecutive hours. May be easily agitated and depressed. Able to monitor appropriateness.</td>
</tr>
<tr>
<td>X</td>
<td>Purposeful and Able to handle multiple tasks simultaneously in all environments but may require periodic breaks. Irritability and low frustration tolerance when sick, fatigued or under stress.</td>
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The Ranchos Los Amigos Cognitive Scale is used by rehabilitation facilities to describe and measure a patient’s level of functioning and progress over an extended period of time.

**Outpatient Rehabilitation**

Health Net, Inc. considers up to 3 hours per week of individualized, neurocognitive rehabilitation for diagnosed cognitive impairment(s) after TBI medically necessary when it is a component of a multidisciplinary rehabilitation program consisting of at least 2 different types of therapy (e.g. physical therapy, occupational therapy, speech therapy, or pulmonary rehabilitation) and there are no contraindications* and all of the following are met:

1. Specific short and long term goals, as well as anticipated discharge date, are documented; and
2. Cognitive interventions are structured, systematic, individualized, and restorative; and
3. Injury occurred no more than 6 months from date of the request; and
4. Patient was active in the home setting prior to admission; and
5. Patient is responsive to verbal or visual stimuli** and demonstrates the ability, or potential, to make progress and achieve set goals in therapy; and
6. Absence of substance abuse issues or acute psychiatric disorders

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* The list of contraindications may vary depending on the rehabilitation facility.
** Verbal stimuli are preferable.
Note: Outpatient cognitive rehabilitation programs are generally limited to outpatient programs. Cognitive rehabilitation in the home is indicated only if the individual meets medical necessity criteria for homecare. In general, to qualify for home health care, an individual must be homebound and require intermittent skilled nursing care, physical therapy, or speech therapy.

HealthNet Inc. follows Medicare’s definition of homebound. An individual is considered to be homebound if they have an illness or injury that restricts their ability to leave their residence except with the aid of supportive devices (canes, wheelchairs and walkers), special transportation or another person. Individuals with conditions for which leaving home is medically contraindicated are also considered homebound.

*Contraindications to cognitive rehabilitation include the inability of member to participate in treatment plan (i.e., orthopedic issues, medical, psychosocial issues, or behavioral issues).

**Patients who have no response to stimuli, a generalized response to stimuli which is an inconsistent or non-purposeful, and/or reactions to stimuli which are delayed or non-specific are not appropriate candidates for cognitive rehabilitation care.

Important Note:
Cognitive rehabilitation is considered medically necessary up to 3 hours per week barring any limitations, restrictions or exclusions present in the member’s Certificate of Coverage, Health Net, Inc. does NOT cover custodial care to assist with activities of daily living (ADLs). Such care is considered to be unskilled, non-medical care and can be provided by people who have no medical training, by low-level aides trained in caregiving skills, by family members or other unpaid volunteers. Custodial care is defined as personal care to assist with ADLs or to supervise someone with a cognitive impairment. ADLs include providing food, including special diets, clothing, and shelter; personal hygiene services; observation and general monitoring; bowel training or management; safety precautions; general preventive procedures; companionship; recreation; transportation; someone who needs reminders to take medication on schedule and such other elements of personal care that reasonably can be performed by an untrained adult with minimal instruction or supervision.

As such, for the short- or long-term, Health Net, Inc. does NOT consider participation in or admission for any of the following to supervise someone with a cognitive impairment in a protected, monitored, or controlled environment for the sake of safety medically necessary because it does not require a physician's orders and can be rendered safely and reasonably by someone without professional medical skills:

1. Transitional living centers
2. Day programs
3. Community-based programs
4. Non-medical services such as clubhouses for socialization
5. Social skill development programs
6. Supported living programs
7. Independent living centers
8. Supported employment programs

Discharge Criteria from Outpatient Rehabilitation
1. The individual’s documented treatment plan, goals and objectives have been substantially met; and
2. The patient is not making progress toward treatment goals, has reached a plateau or is regressing, demonstrated by the lack of measurable progress towards set goals for at least 1 week, and there is no reasonable expectation of progress despite treatment planning changes; and
3. Patient fails to comply with the treatment program, or attendance in therapies is insufficient, to the extent that treatment is not beneficial and does not improve compliance with counseling from clinic staff; and
4. The patient refuses to continue therapy and voluntarily terminates from the program; and
5. The physician discontinues treatment

The following services, frequently associated with cognitive rehabilitation programs, are not considered medically necessary as they are not considered primarily medical in nature:

- Vocational rehabilitation
- Structured adult education
- Community re-entry programs
- Behavioral training
- Driving training
- Compensatory devices such as memory books, date books, electronic paging systems or computer-assisted training
- Employment counseling
- Work hardening
- Cognitive therapy provided to improve academic performance
- Music, recreation and/or art therapy
- Intelligence testing (IQ testing)
- Community-based, non-medical services such as clubhouses for socialization, day programs and social skill development programs, supported living programs and independent living centers, and supported employment programs

**Codes Related To This Policy**

**NOTE:**
The codes listed in this policy are for reference purposes only. Listing of a code in this policy does not imply that the service described by this code is a covered or non-covered health service. Coverage is determined by the benefit documents and medical necessity criteria. This list of codes may not be all inclusive.

On October 1, 2015, the ICD-9 code sets used to report medical diagnoses and inpatient procedures have been replaced by ICD-10 code sets.

**ICD-9 Codes**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>438.0-438.1</td>
<td>Cognitive deficits</td>
</tr>
<tr>
<td>800-854</td>
<td>Traumatic Brain Injury</td>
</tr>
<tr>
<td>959.0-959.09</td>
<td>Other and unspecified injury to head, face and neck</td>
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</tbody>
</table>

**ICD-10 Codes**

<table>
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<tr>
<th>Code</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>I69.90-169.998</td>
<td>Sequelae of unspecified cerebrovascular disease</td>
</tr>
<tr>
<td>S06.0-S09.93</td>
<td>Intracranial injury</td>
</tr>
<tr>
<td>S07.0-S09.93</td>
<td>Crushing injury of head</td>
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</tbody>
</table>

**CPT Codes**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>97532</td>
<td>Development of cognitive skills to improve attention, memory,</td>
</tr>
</tbody>
</table>
(includes compensatory training), direct (one-on one) patient contact, each 15 minutes

**HCPCS Codes**
N/A

**Scientific Rationale – Update February 2016**
Park et al. (2015) The purpose of this meta-analysis was to investigate the overall effect of occupation-based cognitive rehabilitation on patients' improvement in cognitive performance components, activity of daily living (ADL) performance, and values, beliefs and spirituality functions of patients with TBI. The authors examined nine studies that are related to the occupation-based cognitive rehabilitation on persons with TBI. In persons with TBI, overall mental functions, ADL, and values, beliefs and spirituality were significantly improved in the groups that received occupation-based cognitive rehabilitation compared with comparison groups (mean d=0.19, p<.05). Evidence from the present meta-analytic study suggests that occupation-based cognitive rehabilitation would be beneficial for individuals with TBI for improving daily functioning and positively be able to affect their psychosocial functions. Future research should evaluate the effectiveness of specific occupation-based cognitive rehabilitations programs in order to improve consistency among rehabilitation providers.

**Scientific Rationale – Update April 2010**
The European Federation of Neurological Societies (ENFS) guidelines on cognitive rehabilitation (2005) reported, there is enough overall evidence to award a grade A, B, or C recommendation to some forms of cognitive rehabilitation in patients with neuropsychological deficits in the post-acute stage after a focal brain lesion (stroke, TBI). These include aphasia therapy, rehabilitation of unilateral spatial neglect (ULN), attentional training in the post-acute stage after TBI, the use of electronic memory aids in memory disorders, and the treatment of apraxia with compensatory strategies. They based this conclusion on a limited number of randomised controlled trials (RCTs), and a considerable amount of evidence coming from class II, III, and IV studies. They noted further there is a need for adequately designed studies in this area, which should take into account specific problems such as patient heterogeneity and treatment standardization.

Cicerone et al (2009) evaluated the methodological quality of research on cognitive rehabilitation after traumatic brain injury (TBI). Thirty-two RCTs and 21 observational studies were independently reviewed and rated by 2 of the authors. Initial agreement between raters for individual studies ranged from 57% to 100%. Interrater reliabilities based on the kappa statistic indicated moderate to substantial agreement. The authors reported several high-quality RCTs support the effectiveness of interventions for attention, communication skills, and executive functioning after TBI. Several high-quality observational studies support the effectiveness of comprehensive-holistic rehabilitation after TBI, including improvements in participation outcomes.

Zhu et al (2007) evaluated the effects of an increase in the intensity of rehabilitation on the functional outcome of patients with traumatic brain injury (TBI). Sixty-eight patients (age 12-65 years) with moderate-to-severe TBI were included. They were randomized into high (4-hour/day) or control (2-hour/day) intensity rehabilitation programs at an average of 20 days after the injury. The programs ended when the patients achieved independence in daily activities or when 6 months had passed. The investigators reported no significant differences were found in the Functional Independence Measure (FIM) (primary outcome) and Neurobehavioural Cognitive...
Status Examination (NCSE) total scores between the two groups. There were significantly more patients in the high intensity group than in the control group who achieved a maximum FIM total score at the third month (47% vs. 19%, \( p = 0.015 \)) and a maximum Glasgow Outcome Scale (GOS) score at the second (28% vs. 8%, \( p = 0.034 \)) and third months (34% vs. 14%, \( p = 0.044 \)). The authors concluded that early intensive rehabilitation may improve the functional outcome of patients with TBI in the early months post-injury and hence increase the chance of their returning to work early. Intensive rehabilitation in this study speeded up recovery rather than changed the final outcome.

**Scientific Rationale – Initial**

According to the Centers for Disease Control (CDC), a blow or jolt to the head can result in a traumatic brain injury (TBI), which can disrupt the normal function of the brain. The severity of the injury may range from mild—a brief change in mental status or consciousness, to severe—an extended period of unconsciousness (30 minutes or more). This can include prolonged amnesia after the injury, or a penetrating skull injury. “Any TBI can result in short- and long-term disabilities (CDC 2003). Brain injuries are among the most likely types of injury to cause death or permanent disability.”

According to the National Institute of Health (NIH), traumatic brain injury (TBI) results principally from externally inflicted trauma: vehicular incidents, falls, acts of violence, and sports injuries. The estimated incidence rate is 100 per 100,000 persons with 52,000 annual deaths. The highest incidence is among persons 15 to 24 years of age and 75 years and older. The rate of recovery varies widely over time (from months to years) for each individual patient who experiences a TBI. In most cases, cognitive deficits following traumatic brain injury will improve over time. In milder cases this improvement may occur within just a few weeks or months, whereas in the most severely injured cases the improvement may take place over years. Patients with the most severe injuries often have some degree of cognitive deficit for the rest of their lives, but it is difficult to predict early in their recovery at what level they might function in the future. Cognitive recovery typically proceeds in overlapping stages, with more marked improvements in particular skills occurring at different times.

The cognitive consequences of TBI are quite broad and produce a myriad of functional problems. Following TBI, it is common to find deficits in areas such as ability to concentrate, communication skills, ability to learn and recall new information, organizing materials spatially, and ability to reason effectively. These difficulties are more likely to be evident with severe injury (Glasgow Coma Scale score less than 8 or post-traumatic amnesia beyond one week) but have also been evidenced, but to a lesser extent, after milder injuries. Rarely are the consequences limited to one set of symptoms, clearly delineated impairments, or a disability that affects only one part of a patient’s functioning. Rather, the consequences of TBI often affect a broad range of human functions. Frontal lobe functions, such as the executive skills of problem-solving, abstract reasoning, insight, judgment, planning, information processing and organization are especially vulnerable to TBI. Deficits in language use and visual perception are also common. Some of the most persistent problems include memory impairment and difficulties in attention and concentration. Behavioral deficits resulting from TBI include decreased ability to initiate responses, verbal and physical aggression, agitation, learning difficulties, limited self-awareness, and marked impulsivity. Mood disorders, personality changes, altered emotional control, depression, and anxiety are also prevalent after TBI.

Cognitive rehabilitation therapy is a medical rehabilitation treatment for the cognitive problems caused by injuries to the brain. The main goal of cognitive rehabilitation is
to maximize a patient’s capacity to process and interpret information, thereby regaining a level of daily functioning lost or impaired following a TBI. It is imperative that a patient’s pre-injury level of functioning is taken into account in order to set suitable goals. There are three traditional approaches to cognitive rehabilitation:

1. **Restorative**: cognitive training and exercises directed towards strengthening and restoration of specific function(s),
2. **Compensatory**: cognitive training focused on adapting to the presence of a cognitive deficit through use of compensatory devices and strategies
3. **Restructuring**: environmental restructuring and planning to promote improved functioning by changing the demands placed on the individual by themselves and others.

The types of problems addressed in cognitive rehabilitation fall into the following categories: visual perception, memory, reasoning and problem solving, impulse control and self-regulation, direction of attention and effort, expression and abstract thinking. Comprehensive interdisciplinary rehabilitation treatment, provided by a diverse team of experienced professionals, is commonly used for persons with TBI. Neurocognitive therapy typically involves various medical disciplines such as neurology, physical medicine and rehabilitation, speech therapy and occupational therapy. These programs use individually tailored interventions, both restorative and compensatory, in order to achieve both intermediate goals in cognitive functioning and larger scale (global) outcomes. Unfortunately, this personalized approach leads to great difficulty in the scientific evaluation of effectiveness, as there is significant diversity among both persons with TBI and their comprehensive treatment programs. Nonetheless, uncontrolled studies and one nonrandomized clinical trial support the effectiveness of these approaches.

There are many reports of interventions for family members of individuals with TBI, including psychological and social support and education. Although no empiric studies have evaluated the efficacy of these interventions, they are supported by substantial clinical experience. Other interventions, such as structured adult education, nutritional support, music and art therapy, and/or therapeutic recreation are used to treat persons with TBI. While these methods are frequently utilized, their efficacy has not been studied.

According to the NIH Consensus Development Conference Statement of 1998, evidence supports the use of certain cognitive and behavioral rehabilitation strategies for individuals with TBI in particular circumstances. Appropriate interventions share certain characteristics in that they are structured, systematic, goal-directed, and individualized. There are numerous approaches to TBI rehabilitation; most involve a traditional medical perspective. Common acute phase approaches include ICU/acute trauma and neurological care, acute inpatient hospital rehabilitation, and subacute rehabilitation. An extensive literature has examined the effectiveness of comprehensive rehabilitation programs for persons with TBI. Unfortunately, most studies are not rigorous from a methodological standpoint. According to the NIH, although studies are relatively limited, available evidence supports the use of certain cognitive and behavioral rehabilitation strategies for individuals with TBI, however this research needs to be replicated in larger, more definitive clinical trials. Uniform standards and minimal data sets to describe injury type, severity, and significant interacting variables, which could provide a total injury profile across a continuum of recovery, need to be developed as well as basic and common classification systems of TBI.
The relative paucity of rigorous investigation and the heterogeneity of subjects, study design and outcome notwithstanding, several common and consistently recurring themes become apparent from a detailed review of the published scientific evaluations of cognitive and behavioral rehabilitation interventions. Evidence supports the use of certain cognitive and behavioral rehabilitation strategies for individuals with TBI. These interventions share certain characteristics in that they are structured, systematic, goal-directed, and individualized and they involve learning, practice, social contact, and a relevant context. There is evidence that a form of cognitive rehabilitation that provides environmental cues and assistance (i.e., personally adapted electronic devices that provide reminders to perform certain tasks) improves everyday memory function, however outcome measures present a atypical problem, since some studies use global "macro"-level measures (e.g., return to work), while others use "intermediate" measures (e.g., improved memory). These studies also have been limited by small sample size, failure to control for spontaneous recovery, and the unspecified effects of social contact. A great deal of the scientific evidence to support the use of these approaches derives from relatively limited studies that should be replicated in larger, more definitive clinical trials.

In 1998, the Agency for Health Care Policy and Research (AHCPR) awarded a contract to Oregon Health Sciences University for a review of published reports and compilation of an evidence report. The following is an excerpt from the summary of information presented in the full report.

**Evidence Report/Technology Assessment: Number 2**

**Rehabilitation for Traumatic Brain Injury**

**Key Questions About Traumatic Brain Injury**

1. Should interdisciplinary rehabilitation begin during the acute hospitalization for traumatic brain injury?

One small, retrospective, observational study from a single rehabilitation facility supports an association between the acute institution of formalized, multidisciplinary, physiatrist-driven TBI rehabilitation and decreased length of stay (acute hospital and acute rehabilitation) and some measures of short-term physiologic (noncognitive) patient outcomes. The level of evidence is Class III. This study concerned adult patients with severe brain injury (Glasgow Coma Scale 3-8); there is no evidence from comparative studies for or against early rehabilitation in patients with mild and moderate injury.

2. Does the intensity of inpatient interdisciplinary rehabilitation affect long-term outcomes?

When measured as the hours of application of individual or grouped therapies, there is no indication that the intensity of acute, inpatient TBI rehabilitation is related to outcome. Because of methodological weaknesses, however, previous studies are likely to have missed a significant relationship if one exists (a type 2 error). These studies contained insufficient information about severity of injury and baseline function to ensure the comparability of compared groups. Also, these studies did not consider the quality of individual treatments, their lack of autonomy in the cognitive realm, and the delivery milieu. One or more of these factors may affect the outcome of care more than the time spent in each modality. Therefore, future research into efficacy of acute inpatient TBI rehabilitation must more adequately measure such factors and include the factors in their predictive models. Future studies also must employ a wider spectrum of outcome measures, including measurement of outcomes across longer periods of time after discharge.
From a clinical aspect, the evidence does not support equating different TBI rehabilitation delivery systems based on equivalent times of patient exposure to various therapeutic modalities. For example, this analysis would not support predicting that patient benefit would be equal if an equal time spectrum of rehabilitation therapies were delivered at a rehabilitation center as compared with a skilled nursing facility. More detailed analysis of factors involved in predicting response to rehabilitation modalities must be considered in approaching such questions.

Additionally, mandating a minimum number of hours of applied therapy for all TBI patients is not supported by the present state of scientific knowledge. How much of which intervention(s) optimizes recovery in a given type of patient has been inadequately studied. It is probable that specific basic programs will have to be related to individual patient groups. Developing such algorithms requires further research.

Many patients who suffer TBI do not enter acute inpatient rehabilitation. Only one study of the effectiveness of inpatient rehabilitation included a comparison group of patients who did not undergo inpatient rehabilitation. Future studies should compare acute, inpatient rehabilitation to commonly used alternatives to inpatient rehabilitation, such as care in a well-staffed skilled nursing facility or in less intense variations of acute rehabilitation. Very little is known about the outcomes of TBI in these settings.

3. Does the application of cognitive rehabilitation enhance outcomes for people who sustain TBI?

There is evidence from two small studies (Class I and Class III) that a personally adapted electronic device, a notebook, and an alarm wristwatch reduce everyday memory failures for people with TBI. There is evidence from one study (Class II[a]) that compensatory cognitive rehabilitation (CCR) reduces anxiety and improves self-concept and relationships for people with TBI. Evidence from two studies (Class I and Class II [b]) supports the use of computer-aided cognitive rehabilitation (CACR) to improve immediate recall on neuropsychological testing, but the clinical importance of this finding has not been validated.

Several tools have been developed as prognostic indicators of outcomes post TBI. The Ranchos Los Amigos Cognitive Scale is widely used by rehabilitation facilities to describe and measure a patient's level of functioning and progress over an extended period of time. The Ranchos scores also guide clinicians in the development of individualized treatment programs. The Disability Rating Scale (DRS) was developed and tested with older juvenile and adult individuals with moderate and severe TBI in an inpatient rehabilitation setting. Cognitive ability for "Feeding," "Toileting" and "Grooming" reflect level of disability. "Eye Opening," "Communication Ability" and "Motor Response", "Level of Functioning", and "Employability" reflect the level of disability. The maximum score a patient can obtain on the DRS is 29 (extreme vegetative state). A person without disability would score zero.

The Functional Independence Measure (FIM) assesses physical and cognitive disability in terms of burden of care. It is used to monitor patient progress and to assess outcomes of rehabilitation. The FIM is an 18-item, seven level ordinal scale. It is the product of an effort to resolve the long-standing problem of lack of uniform measurement and data on disability and rehabilitation outcomes. The FIM emerged from a thorough developmental process overseen by a National Task Force of Rehabilitation research in 1983 in order to achieve uniform definitions and measurements of disability. One limitation relative to using the FIM in evaluating...
survivors of TBI is that it is not diagnosis specific. Although found to be reliable and valid for overall assessment, the scale has few cognitive, behavioral, and communication related functional items relevant to assessing persons with TBI.

The FIM measures functional status using 18 items covering six domains:

1. Selfcare or ADL's (6 items on dressing upper and lower body, eating, grooming, toileting, and bathing),
2. Sphincter control (2 items on bowel and bladder management),
3. Mobility (3 transfer items),
4. Locomotion (2 items on walking/wheelchair use and stairs),
5. Communication (2 items on comprehension and expression), and
6. Social cognition (3 items on social interaction, problem solving, and memory).

Mean total FIM score for patients upon admission to a rehabilitation facility is 55.95. Mean score upon rehab discharge is 96.25. Total FIM scores at one and two years post injury are 115.67 and 116.30. The maximum possible score is 126.

Functional Assessment Measure (FAM) was developed as an adjunct to the FIM to specifically address the major functional areas that are relatively less emphasized in the FIM, including cognitive, behavioral, communication and community functioning measures. The FAM consists of 12 items. These items do not stand alone, but are intended to be added to the 18 items of the FIM. The total 30-item scale combination is referred to as the FIM+FAM.

The Neurobehavioral Rating Scale (NRS) of Levin et al (1987) is a 27 item, multidimensional clinician based assessment instrument designed to measure neurobehavioral. The ratings for each item are defined on the basis of the potential impact of the behavior on social and occupational independence. The NRS-R is administered through a brief structured interview (typically requiring 15–20 minutes to complete) which includes a test of orientation and memory for recent events, questions regarding emotional state, post-concussional symptoms, focused attention and concentration, explanation of proverbs, tasks of planning and mental flexibility, and delayed recall of three objects presented at the beginning of a session. Observations are also made regarding the patient's fatigability, visible signs of anxiety, disinhibition, agitation, hostility, difficulties in expressive and receptive communication, and disturbance of mood.
Review History

April 2004 Medical Advisory Council
May 2004 Update – no changes
July 2004 Update – no changes
April 2006 Update – no changes
April 2010 Update. Added definition of homebound
April 2011 Added Medicare table
February 2012 Update – no revisions
February 2013 Update – no revisions. Code updates
February 2014 Update – no revisions
February 2015 Update – no revisions. Codes reviewed.
February 2016 Update – no revisions. Codes reviewed.

This policy is based on the following evidence-based guidelines:


References – Update February 2016


References – Update February 2015


References – Update February 2013


References – Update February 2012

References – April 2011

References – Update April 2010

References - Initial
11. Ciceone, K.D., Dahlberg, C., Evidence-Based Cognitive Rehabilitation: Recommendations for Clinical Practice.

**Important Notice**

**General Purpose.**
Health Net's National Medical Policies (the "Policies") are developed to assist Health Net in administering plan benefits and determining whether a particular procedure, drug, service or supply is medically necessary. The Policies are based upon a review of the available clinical information including clinical outcome studies in the peer-reviewed published medical literature, regulatory status of the drug or device, evidence-based guidelines of governmental bodies, and evidence-based guidelines and positions of select national health professional organizations. Coverage determinations are made on a case-by-case basis and are subject to all of the terms, conditions, limitations, and exclusions of the member's contract, including medical necessity requirements. Health Net may use the Policies to determine whether under the facts and circumstances of a particular case, the proposed procedure, drug, service or supply is medically necessary. The conclusion that a procedure, drug, service or supply is medically necessary does not constitute coverage. The member's contract defines which procedure, drug, service or supply is covered, excluded, limited, or subject to dollar caps. The policy provides for clearly written, reasonable and current criteria that have been approved by Health Net's National Medical Advisory Council (MAC). The clinical criteria and medical policies provide guidelines for determining the medical necessity criteria for specific procedures, equipment, and services. In order to be eligible, all services must be medically necessary and otherwise defined in the member's benefits contract as described this "Important Notice" disclaimer. In all cases, final benefit determinations are based on the applicable contract language. To the extent there are any conflicts between medical policy guidelines and applicable contract language, the contract language prevails. Medical policy is not intended to override the policy that defines the member's benefits, nor is it intended to dictate to providers how to practice medicine.

**Policy Effective Date and Defined Terms.**
The date of posting is not the effective date of the Policy. The Policy is effective as of the date determined by Health Net. All policies are subject to applicable legal and regulatory mandates and requirements for prior notification. If there is a discrepancy between the policy effective date and legal mandates and regulatory requirements, the requirements of law and regulation shall govern. *In some states, prior notice or posting on the website is required before a policy is deemed effective.* For information regarding the effective dates of Policies, contact your provider representative. The Policies do not include definitions. All terms are defined by Health Net. For information regarding the definitions of terms used in the Policies, contact your provider representative.

**Policy Amendment without Notice.**
Health Net reserves the right to amend the Policies without notice to providers or Members. In some states, prior notice or website posting is required before an amendment is deemed effective.

**No Medical Advice.**
The Policies do not constitute medical advice. Health Net does not provide or recommend treatment to members. Members should consult with their treating physician in connection with diagnosis and treatment decisions.

**No Authorization or Guarantee of Coverage.**
The Policies do not constitute authorization or guarantee of coverage of particular procedure, drug, service or supply. Members and providers should refer to the Member contract to determine if exclusions, limitations, and dollar caps apply to a particular procedure, drug, service or supply.

**Policy Limitation: Member’s Contract Controls Coverage Determinations.**
Statutory Notice to Members: The materials provided to you are guidelines used by this plan to authorize, modify, or deny care for persons with similar illnesses or conditions. Specific care and treatment may vary depending on individual need and the benefits covered under your contract. The determination of coverage for a particular procedure, drug, service or supply is not based upon the Policies, but rather is subject to the facts of the individual clinical case, terms and conditions of the member's contract, and requirements of applicable laws and regulations. The contract language contains specific terms and conditions, including pre-existing conditions, limitations, exclusions, benefit maximums, eligibility, and other relevant terms and conditions of coverage. In the event the Member’s contract (also known as the
benefit contract, coverage document, or evidence of coverage) conflicts with the Policies, the Member’s contract shall govern. The Policies do not replace or amend the Member’s contract.

**Policy Limitation: Legal and Regulatory Mandates and Requirements**

The determinations of coverage for a particular procedure, drug, service or supply is subject to applicable legal and regulatory mandates and requirements. If there is a discrepancy between the Policies and legal mandates and regulatory requirements, the requirements of law and regulation shall govern.

**Reconstructive Surgery**

CA Health and Safety Code 1367.63 requires health care service plans to cover reconstructive surgery. “Reconstructive surgery” means surgery performed to correct or repair abnormal structures of the body caused by congenital defects, developmental abnormalities, trauma, infection, tumors, or disease to do either of the following:

1. To improve function or
2. To create a normal appearance, to the extent possible.

Reconstructive surgery does not mean “cosmetic surgery,” which is surgery performed to alter or reshape normal structures of the body in order to improve appearance.

Requests for reconstructive surgery may be denied, if the proposed procedure offers only a minimal improvement in the appearance of the enrollee, in accordance with the standard of care as practiced by physicians specializing in reconstructive surgery.

**Reconstructive Surgery after Mastectomy**

California Health and Safety Code 1367.6 requires treatment for breast cancer to cover prosthetic devices or reconstructive surgery to restore and achieve symmetry for the patient incident to a mastectomy. Coverage for prosthetic devices and reconstructive surgery shall be subject to the co-payment, or deductible and coinsurance conditions, that are applicable to the mastectomy and all other terms and conditions applicable to other benefits. "Mastectomy" means the removal of all or part of the breast for medically necessary reasons, as determined by a licensed physician and surgeon.

**Policy Limitations: Medicare and Medicaid**

Policies specifically developed to assist Health Net in administering Medicare or Medicaid plan benefits and determining coverage for a particular procedure, drug, service or supply for Medicare or Medicaid members shall not be construed to apply to any other Health Net plans and members. The Policies shall not be interpreted to limit the benefits afforded Medicare and Medicaid members by law and regulation.