Interdisciplinary Approaches to Brain Damage

Ad Hoc Committee on Interprofessional Relationships With Neuropsychology of the American Speech-Language-Hearing Association and Representatives of the Division of Clinical Neuropsychology (Division 40) of the American Psychological Association

The following is the position of the American Speech-Language-Hearing Association (ASHA) and Division 40 of the American Psychological Association. This document represents the cumulative effort of the members of the Ad Hoc Committee on Interprofessional Relationships with Neuropsychology (Leslie J. Gonzalez Roth, chair; Brenda L. Azamovich, Craig W. Linebaugh, Richard K. Peach, and Lynette R. Goldberg, ex officio; under the guidance of Ann L. Carey, vice president for professional and governmental affairs) and representatives of the Division of Clinical Neuropsychology (Division 40) of the American Psychological Association (Kenneth M. Adams, Linas Beilisuskas, Robert A. Bornstein, Gerald Goldstein, and Byron P. Routke). The position statement was adopted as an official statement of ASHA by the Legislative Council (LC 39-93) in November 1989, and by the Executive Committee of Division 40 of the American Psychological Association in February 1989.

Statement

Neuropsychology is the scientific study of the relationship between brain function and behavior. As such, neuropsychology, in the classic sense, is an interdisciplinary knowledge area embracing many contributing disciplines and professions. Therefore, it is inappropriate that the knowledge base of neuropsychology be regarded as proprietary by any given discipline or profession.

It is acknowledged that this knowledge base may be applied for the betterment of human welfare by different disciplines and professions with different training emphases. It is assumed that such practice will include techniques and procedures included in discipline-specific training and exclude those for which competence has not been established through such training criteria. Individual practice may also be limited by laws or even ethical considerations in a given instance. It is also recognized that clinical practice with individuals who demonstrate impairment of the central nervous system is frequently an interdisciplinary effort which employs the particular strengths and expertise of various professions and disciplines. Cooperation and mutual respect between professions and disciplines which employ the knowledge base of neuropsychology is encouraged in patient treatment. This is the most appropriate way to ensure the welfare of the patient, which is always the first priority.

Various techniques and applications of neuropsychology may not be mutually exclusive between professions. However, it is also recognized that different legal jurisdictions impose different limits on the scope of practice of the professions. These limits include educational requirements, training experience, and the designation and description of professional practice.

All relevant disciplines and professions should contribute to the expanding knowledge base of neuropsychology and to its appropriate applications in patient care. Given the interdisciplinary history of the development of neuropsychology, mutual respect and cooperation between disciplines and professions is an ongoing necessity.

Reference this material as follows:
Interdisciplinary Approaches to Brain Damage. Asha, 32 (Suppl. 2), 3.
INTRODUCTION

Over 2 million head injuries occur each year in North America (National Institutes of Health, 1989). As many as 100,000 of these people die and 500,000 require some form of medical and/or behavioral intervention during and following the acute phase of their injury. Similarly, the U.S. Department of Health and Human Services reports an average of 500,000 strokes annually, with an increasing survival rate and nearly 30% occurring in persons under 65 years of age. In many cases, treatment is provided by an interdisciplinary team composed of professionals from various disciplines. Typically, the primary objective of such a team is to ensure that patients at all levels of severity receive necessary and appropriate rehabilitative services that result in functional outcomes commensurate with their post-injury potential.
Interdisciplinary assessment and treatment of people with brain injury is not a new concept. Such teams have been used in many rehabilitation facilities during the past decade (Levin, Benton, & Grossman, 1982). The team approach is believed to be important in the management of individuals with brain injury, given the multiplicity of behavioral, cognitive, and physical components affected, and the need for a coordinated effort without unnecessary duplication of services.

Although the interdisciplinary team concept has been accepted as the preferred approach for the delivery of services, general guidelines regarding the basic structure and function of such a rehabilitation team are not commonly available to health care administrators, rehabilitation professionals, patients, or their families. The current document was developed by The Joint Committee on Interprofessional Relationships between Division 40 (Clinical Neuropsychology) of the American Psychological Association and the American Speech-Language-Hearing Association to offer general guidelines regarding the structure and function of the interdisciplinary brain injury team. The document is organized around three basic dimensions of the interdisciplinary team: (1) team membership; (2) coordination of the team; and (3) the process that facilitates team function.

The following descriptions and explanations of these three basic dimensions of interdisciplinary team function are meant to provide general guidance to rehabilitation professionals and health care administrators in the organization and
implementation of programs for brain injury rehabilitation. This document is not intended to constitute a mandate for a specific service delivery model for brain injury rehabilitation.

**STRUCTURE OF THE INTERDISCIPLINARY TEAM**

An interdisciplinary brain injury team should include the patient, when possible, members of the patient's family, a coordinator, and those professionals from various disciplines necessary for the patients' comprehensive assessment and treatment. It is almost always necessary that professionals work closely with the patient and family as part of a team in order to attend to the adaptive, behavioral, cognitive, communicative, emotional, medical, physical, sensory, and social needs of the patient.

Team membership should include, but is not limited to, the following professionals: audiologist, educator, neuropsychologist, occupational therapist, physical therapist, physician, rehabilitation nurse, social worker, speech-language pathologist, therapeutic recreation specialist, and vocational rehabilitation counselor. When cognitive, communicative, and psycho/social domains are affected, the team should include at least a neuropsychologist and speech-language pathologist working in concert with the patient and family.
COORDINATION OF THE INTERDISCIPLINARY TEAM

A coordinator or case manager will serve as team administrator and facilitator and is responsible for ensuring interdisciplinary team function. The selection of the team coordinator should be based on administrative and leadership abilities and not on an individual's academic degree or professional discipline. More specifically, the coordinator should exhibit the following:

1. Appreciation of, and respect for, the expertise of each discipline as it contributes to the patient’s management.

2. Familiarity with various domains of brain-behavior relations and their manifestations following brain injury (e.g., cognitive, communicative, medical, neurological, orthopedic, and psychosocial).

3. The ability to motivate and allocate responsibility to appropriate team members, to recognize the team as a decision-making body, and to foster the professional growth of the team and its members.

4. The ability to allocate team resources within clinical, financial, and program constraints.
5. Knowledge of measurement systems that allow for the determination of treatment efficacy and outcome.

6. The ability to educate colleagues, administrators, parents, primary caregivers, and the community about individuals with brain injury and to promote factors that lead to prevention.

**PROCESS THAT FACILITATES INTERDISCIPLINARY TEAM FUNCTION**

The fundamental purpose of the brain injury team is to provide the most effective services available to maximize the recovery of the patient. The service delivery process is often complex and will vary among facilities. However, the rehabilitation process should include the following basic components:

1. Knowledge about variables that affect behavior and outcome, including (1) age and functioning levels; (2) effects of medications on behavior; (3) potential medical complications and their effect on behavior; (4) differing linguistic and cultural needs; (5) various service delivery models.
2. Establishment and integration of specific discipline assessments and plans of care. In this connection, the following are usually thought to be necessary:

A. The collection of a complete history and interview of patient/family that can serve as a basis for structuring assessment.

B. Discipline-specific assessments conducted individually or together in order to construct a set of observations. These assessments should result in appropriate diagnosis and a framework for establishing a plan of care, utilizing intermediate treatment goals, and ultimately resulting in specific, functional outcomes.

3. Determination of differential diagnoses after all observations are analyzed and integrated during clinical discussion. Prerequisites for this would include the following:

A. An initial assessment meeting to provide for reporting of strengths/deficits within a format focusing upon mechanisms and processes necessary for the development of functional skill areas used in communication, mobility, safety, self-care, toileting, and social/behavioral skills.
B. Although a specific discipline may be primarily responsible for assessing a functional area, observations and assessments by other disciplines are communicated as a means of determining the overall reliability and consistency of assessment.

C. Meetings to integrate clinical findings into a plan of care that are structured to facilitate an exchange of all opinions, enhancement of positive treatment outcomes, and avoidance of negative treatment outcomes.

4. Development of a plan of care to provide well defined, attainable goals, with their relevance for eventual functional treatment outcomes. Such a plan should include the following:

A. Clearly defined goals in various functional skill areas to be achieved within a specified time frame.

B. Provision for regular review and appropriate alteration of goals.
C. Discharge planning and a statement of functional independence/dependence. This is necessary to assure that the discharge plan identified at admission remains consistent with the patient's projected skill level at discharge from rehabilitation.

D. The necessary structure and content to comply with regulatory agency standards and guidelines.

5. Involvement of the patient and family as integral members of the interdisciplinary team. In this connection, the following points should be emphasized:

A. Differing opinions relative to diagnosis and treatment planning can, at times, include those of the patient and family; when such differences exist, the team should discuss them at the time a plan of treatment is developed.

B. Open discussion with family identifies the clinical team as the driving force behind decisions regarding care, discharge, and overall prognosis.

C. Provisions for counseling services that address family and patient issues should be stated in the Plan of Care.
6. An understanding among team members of the relationship between various levels of patient assessment and its contribution to evaluation of the rehabilitation program. This would, under ordinary circumstances, include the following:

A. In addition to appropriate assessment relevant to each discipline, the team conducts an overall assessment of functional independence at admission, and discharge, and at predetermined dates after discharge.

B. The facilitation of reliability through the discussion of observations of patient behavior across and between disciplines.

C. Intermediate goals and functional outcomes are integrated into a facility-wide program evaluation process.

D. Integration across assessment, plan of care, discharge planning, and the measurement of intermediate and terminal goals.

E. The establishment of appropriate discharge criteria, and the adoption of procedures to facilitate any necessary modifications of the program as patient progress is observed.
7. A measurement system for determining treatment efficacy. This would include measurement tools used in the context of appropriate statistical designs that allow for the measurement of treatment efficacy (e.g., baseline measures for patients with chronic conditions; single subject experimental designs for patients with acute injuries).

SUMMARY

This report provides guidelines for the structure and function of interdisciplinary teams assembled for the delivery of clinical services to individuals with brain injury. Specifically, the report addresses issues concerning team membership, skills required of the team coordinator, and the processes that facilitate the attainment of team goals. These suggestions are general in nature and are designed to provide rehabilitation professionals and healthcare administrators with some guiding principles for the clinical management of individuals with brain injury who are receiving services through an interdisciplinary team.

REFERENCES


Re: CPT Codes - Neurocognitive Therapy

Dear Ms. O’Heron,

I am writing in follow-up to our discussion and my letter of June 7, 1994.

As I discussed, we provide cognitive therapy, neuropsychological intervention, and a variety of brain injury rehabilitation programs. I was pleased to hear that the AMA is considering codes for such services. We are finding that the term "Neurocognitive Therapy" works well as a general term to label the services we provide.

I promised to gather some of the material that describes our services and send it to you in hope that it might be of use to you in future code development. Such services have been billed as "Unlisted physiological medicine services or procedures" (97799). This complicates billing because of the explanations needed to convey what we do to a proliferation of new review boards which generally are not as familiar with our specialty services as the Rehabilitation Nurses and Physiatrists with which we have dealt for the past fifteen years.

I have attached material to this letter addressing many of the questions typically asked about Neurocognitive Therapy. Included is discussion about terminology, scope of treatment, CARF criteria, qualified personnel, and other topics.

I hope this information will be helpful and provide a basis for further development. We would be happy to help in any effort to standardize codes and promote understanding of this kind of therapy. Please let me know how we can assist you further.

Sincerely,

Henry S. Irving
President

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NEUROCOGNITIVE THERAPY

Rationale

Until approximately the last 20 years, individuals who acquired brain damage after birth were treated for any physical sequelae (i.e., paresis, dysarthria, incontinence, etc.) of their illness/injury, but received little to no treatment for the cognitive and behavioral sequelae of their conditions. However, as more and more has become known about the anatomical and physiological substrata of cognition, behavioral control, etc., in the human brain, there has been a growing recognition of the cognitive/behavioral consequences of acquired brain damage. It has been estimated that as much as 80% of long term disability after traumatic brain injury is attributable to cognitive/behavioral factors. In response to the growing recognition of the cognitive/behavioral consequences of acquired brain dysfunction, a body of treatment has been developed which has been called by multiple names, including "Neurocognitive Therapy", "Cognitive Therapy", "Cognitive Retraining", "Neuropsychological Intervention", "Cognitive Rehabilitation", "Cognitive Remediation", "Neuropsychological Rehabilitation", etc. We will refer to this treatment as "Neurocognitive Therapy" in this presentation. The term "neuropsychological" will be used to refer to the combination of neurocognition and neurobehavior.

Definition

"Neurocognitive Therapy" is a treatment modality which is based on:

- a thorough knowledge of the anatomical and physiological substrata of the neuropsychological consequences of acquired brain damage
- a thorough knowledge of which specific treatment techniques are effective in addressing which specific neuropsychological deficits
- a preliminary neuropsychological evaluation to determine the pattern of strengths and weaknesses
- an individualized treatment approach which:
  - targets a realistic improvement in day-to-day functioning
  - carefully addresses neuropsychological deficit areas using the appropriate treatment technique(s).
Individuals Appropriate for Neurocognitive Therapy

Neurocognitive Therapy is most appropriately provided to individuals who have acquired brain damage after birth as a result of such conditions as:

- traumatic brain injury
- cerebrovascular disease
- chemical exposure
- infections
- anoxia/hypoxia
- electrical shock
- autoimmune disorders.

Individuals who are brain damaged as a result of congenital condition, perinatal conditions, or progressive brain disease are generally not appropriate for Neurocognitive Therapy. However, in rare cases they may benefit from such treatment to address very specific neuropsychological issues.

Individuals who are actively abusing various chemical substances are generally not appropriate for Neurocognitive Therapy. However, when the abuse of such substances results in permanent brain dysfunction, Neurocognitive Treatment may be beneficial if they are maintaining total abstinence from chemical substances.

Neurocognitive Therapy vs. Psychotherapy

Neurocognitive Therapy is generally considered to be associated with Neurology and Physical Medicine and Rehabilitation rather than Psychiatry. Knowledge base and treatment paradigms are more closely related to the former two medical disciplines than to the latter.
Personnel Providing Neurocognitive Therapy

Neurocognitive Therapy is generally provided by psychologists, neuropsychologists, speech and language pathologists and occupational therapists who either:

have a thorough understanding of the anatomical and physiological substrate of the neuropsychological sequelae of brain damage

or

are closely supervised by an individual who has a thorough understanding of the anatomical and physiological substrate of the neuropsychological sequelae of brain damage.

Neuropsychological Conditions Frequently Treated

Neuropsychological conditions generally treated by Neurocognitive Therapy include:

Memory

Behavioral Inhibition

Visual Scanning, Perception, Conceptualization and Construction

Reasoning

Judgment

Motor sequencing, inhibition and praxis

Interpersonal Skills

Information Processing Speed

Cognitive Flexibility

Executive Brain Functions
Treatment Format

Neurocognitive Therapy is provided in hospitals, outpatient clinics, residential treatment facilities, and day treatment programs.

Treatment may be provided intensively (i.e., for several hours per days, several days per week) or less intensively (e.g., one hour a week, one hour a month, etc.). Treatment format should be consistent with the patient's condition and the expected outcome.

"CARF Standards"

The Commission on Accreditation of Rehabilitation Facilities (CARF) deals with standards for facilities which provide rehabilitation modalities such as Neurocognitive Therapy. Attached is a copy of the section on Brain Injury Programs with a brief summary of some of the points that most directly relate to Neurocognitive Therapy. One requirement is that accredited outpatient programs must provide or make formal arrangements for "Cognitive rehabilitation" (page 71 - 2.11.D section 70.a.). Their standards also require that a Neuropsychologist be included on the core team of any Medical Brain Injury Inpatient Program (page 68 - 2.11.D section 51. of 1993 Standards). This assures the in-depth knowledge of the organic substrate of neuropsychological conditions which is necessary to develop and provide effective treatment programs.

Because CARF does strongly see the need for qualified neuropsychological input to programs which provide neurocognitive therapy, we have attached information from the 1993-1994 Directory of Diplomates published by the American Board of Professional Psychology (an arm of the American Psychological Association). In this definition is embedded the information that the specialty "..... is now expanding into the treatment of cognitive, attentional, learning and memory, problem-solving, sensorimotor, and psychopathological disorders by means of remediation and retraining procedures as new research warrants". Further explained is the extra training required to claim this specialty over and above what is required for all applied psychologists, i.e., "Acquisition of competency in clinical neuropsychology, in addition to the basic and applied generic core courses and activities that all applied psychologists must have, requires a foundation in the clinical neurosciences, including neurology, neuroanatomy, and neurophysiology, and in basic and clinical neuropsychology."
CPT Coding

Dr. Mary Ellen Hayden, and Pate Rehabilitation use the CPT code 97799 "Unlisted physical medicine service or procedure" for the Neurocognitive Therapy we provide. We believe that a new specific code should be set up for use by Neuropsychologists providing Neurocognitive Therapy. Such a code could also be used for other disciplines once appropriate qualification criteria can be determined.
Some points related to Neurocognitive Therapy:

Under Brain Injury Programs:

p. 69 - 2.11.d (Under Medical Inpatient Programs)
51. ....the core team should also include:
   a. A Neuropsychologist

52. Services from the core team should occupy most of the day, but should be at least 3 hours per day from OT, PT, psychology/neuropsychology, and SLP.

p. 71 - 2.11.d (Under Community Integrated Programs)
70. The program should provide or make formal arrangements for:
   a. Cognitive rehabilitation