Please note, this PREFERRED PRACTICE GUIDELINE is currently being revised. Please follow the guidelines in this document, but be aware that they will soon change.

CASLPO Sept 2014

PREFERRED PRACTICE GUIDELINE FOR
COGNITIVE-COMMUNICATION DISORDERS

TABLE OF CONTENTS

A. PURPOSE OF THE GUIDELINE/PREAMBLE ................................................................. 2
B. DEFINITIONS, TARGET POPULATION ........................................................................ 3
C. SCOPE OF PRACTICE ................................................................................................. 4
D. PREVALENCE OF ABI AND COGNITIVE-COMMUNICATION DISORDERS .......... 4
E. COLLABORATION REQUIREMENTS .......................................................................... 5
F. PRACTICE SETTINGS & CONTINUUM OF SERVICE ................................................ 6
G. ACCESS TO SERVICES ............................................................................................... 7
H. SCREENING .................................................................................................................. 7
I. ASSESSMENT ................................................................................................................ 9
J. MANAGEMENT/TREATMENT ...................................................................................... 12
K. DISCHARGE CRITERIA/PLANNING .......................................................................... 20
L. REPORTING REQUIREMENTS .................................................................................... 20
M. CLINICAL COMPETENCIES .................................................................................... 20
N. RESOURCE REQUIREMENTS .................................................................................... 22
O. PRECAUTIONS .......................................................................................................... 23
APPENDIX A: Treatment Efficacy ................................................................................. 26
APPENDIX B: Glossary .................................................................................................... 28
APPENDIX C: Practice Guidelines Summary Statements ............................................... 32
A. PURPOSE OF THE GUIDELINE/PREAMBLE

The purpose of this preferred practice guideline is to define best practice for speech-language pathologists providing service to individuals with cognitive-communication disorders following acquired, non-progressive brain injury. Best practice must include the patient/client perspective in order to maintain the individual’s dignity and independence in their environment. This guideline would apply to those individuals whose cognitive impairments underlie their communication disorders. This guideline will assist in:

- Establishing consistent practice within the profession for this population
- Guiding continuing education endeavours for this area of practice
- Reducing risk of harm
- Ensuring competent service delivery
- Advocating for conditions to promote best practice
- Informing others of the role of speech-language pathology services in assisting those with acquired brain injuries

B. DEFINITIONS, TARGET POPULATION

The term cognitive-communication disorders is commonly used to define the needs of the acquired brain injury population in Canada (Freund, Hayter, MacDonald, Neary, & Wiseman-Hawkes, 1994; Wiseman-Hakes, Steward, Wasserman, & Schuller, 1998) and throughout the world (Levin, 1992, Serio, Kreutzer, & Gervasio, 1995; Spivak, Spettell, Ellis, & Ross, 1992). A detailed description of the interface between communication and cognition is imperative for effective rehabilitation (McDonald, Togher, & Code, 1999).

Cognitive-communication disorders are communication impairments resulting from underlying cognitive deficits due to neurological impairment. These are difficulties in communicative competence (listening, speaking, reading, writing, conversation and social interaction) that result from underlying cognitive impairments (attention, memory, organization, information processing, problem solving, and executive functions). These disorders are distinct from other neurological communication disorders (e.g., aphasia, dysarthria etc.) and require specific techniques (ASHA, 1987; Freund, et al., 1994; Gillis, 1996; Heilman, Safran & Geschwind, 1971; Sarno, 1980; Ylvisaker & Szekeres, 1986).

Cognitive-communication disorders are commonly associated with traumatic brain injury (TBI) but can also occur as a result of other acquired brain injuries (ABI) such as haemorrhages, stroke, meningitis, encephalitis, anoxia, or tumours.

This guideline focuses on traumatic brain injury, as this is the largest and most documented population with acquired, non-progressive, brain injury resulting in distinct cognitive communication disorders. It is recognized, however, that there are other subpopulations with acquired brain injury for which these guidelines will be applicable and reference will be made where research is available. Regardless of aetiology, this guideline will apply to individuals with cognitive disturbances resulting from ABI that result in communication problems.

---

1 Acquired brain injuries (ABI) are insults to the brain, which have the following characteristics:

1. They are not congenital in that they do not occur as part of the developmental process;
2. They have a rapid onset related to sudden trauma or disease process;
3. They are non-progressive in that degeneration is not expected.
The philosophy of this guideline is intended to be consistent with the World Health Organization’s (WHO) International Classification of Functioning, Disability and Health – ICF (2001) to support the use of unified terminology across health related disciplines (Eadie, 2001; Threats, 2002). Any discussion of cognitive-communication difficulties should be framed using WHO terminology as illustrated below:

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Definition</th>
<th>Cognitive-Communication Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impairment</td>
<td>Problems in body structures and/or body functions such as significant deviation or loss</td>
<td>Examples of specific cognitive impairments that may affect language: Impaired attention, inflexibility, impulsivity, inefficient processing of information (rate, amount and complexity), difficulty processing abstract information.</td>
</tr>
<tr>
<td>Activity /</td>
<td>Aspects of functioning from an individual or societal perspective</td>
<td>Examples of limitations and restrictions: difficulty in conversations, limitations in expressing ideas, opinions, choices, wants and needs, social isolation, dependence on others for functional communication such as medical, legal, and financial transactions</td>
</tr>
<tr>
<td>Participation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contextual</td>
<td>Factors which impact disability ranging from the individual’s immediate environment to the general environment</td>
<td>Examples of difficulties imposed by the environment: lack of family and friendship support, reduced social acceptance, financial constraints, impairment of complex cognitive functioning required to fulfill employment and family responsibilities, inflexible work or academic environment.</td>
</tr>
<tr>
<td>Environmental</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Factors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contextual</td>
<td>Individual factors which influence performance in the environment</td>
<td>Examples of relevant individual factors: Race, gender, age, lifestyle, habits, upbringing, coping styles, social background, education, profession, past experiences, character style.</td>
</tr>
<tr>
<td>Personal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Factors</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

C. SCOPE OF PRACTICE

The Audiology and Speech-language Pathology Act, 1991 states: “The practice of speech-language pathology is the assessment of speech and language functions and the treatment and prevention of speech and language dysfunctions or disorders to develop, maintain, rehabilitate or augment oral motor or communicative functions.” CASLPO maintains that the assessment and treatment of cognitive-communication disorders falls within the definition of communicative functions, as it is a well-defined and internationally accepted area of practice within the field of speech-language pathology. As well as providing direct assessment and treatment, members act as a resource for individuals, families, trauma or brain injury teams, and the community at large. This may involve education of the public regarding cognitive-communication impairments and promoting awareness of strategies for re-integration of individuals into their communities.

D. PREVALENCE OF ACQUIRED BRAIN INJURY AND COGNITIVE-COMMUNICATION DISORDERS

Estimates of incidence and prevalence vary in this population according to the definition of the target population, the sampling variations in age, the severity of injury and the source of data. The following discussion will be limited to traumatic brain injury as this is the largest and most well-defined aetiology of cognitive-communication disorders. However, members are reminded that this guideline applies to all other individuals with cognitive communication disorders, regardless of aetiology. Willer and Moscato (1996) determined that the prevalence of traumatic brain injury in Canada was 74.3 per 100,000 among adults over age 15. The incidence of traumatic brain injury is defined as new cases per year. Sherk (1994) estimated that there are 8600 new cases of traumatic brain injury per year in Ontario among individuals aged 15 – 64. This estimate is limited to individuals requiring hospitalization as a result of injury. The Ontario Brain Injury Association (OBIA) (2001) estimates that 13,947 individuals of all ages survive a traumatic brain injury annually, however 10,842 individuals are discharged without any rehabilitation services. This may provide some insight into the variance of the estimated incidence and
prevalence as individuals who have not been offered rehabilitation services may be unaware of possible impairments due to the traumatic brain injury.

Available research indicates that 80-100% of those with traumatic brain injuries will have some form of communication impairment. (Halpern, Darley & Brown, 1973; Sarno, 1980;) This group is comprised largely of those who have cognitive-communication deficits (Freund et al., 1994; Hagen, 1986; Hartley, 1995; Holland, 1984). Given the estimated incidence of traumatic brain injury in Ontario, combined with the research data on those with residual cognitive-communication impairments, it is estimated that over 11,000 individuals per year in Ontario will require speech-language pathology intervention for cognitive-communication impairments.

E. COLLABORATION REQUIREMENTS

Speech-language pathologists have the primary responsibility for assessing, implementing and evaluating treatment programs for cognitive-communication impairments. It is recognized, however, that following an acquired brain injury, an individual may present with a wide array of deficits, which cannot be treated effectively in isolation. (Diller, 1990) It is therefore important that the speech-language pathologist adopt a collaborative approach. Such an approach would include involving other care providers in the coordination and planning of treatment approaches and thus would require familiarity with their roles. Client consent must be obtained when communicating with other care providers.

A speech-language pathologist may assign components of a treatment program to an unregulated provider as long as appropriate training is provided and adequate supervision maintained according to the CASLPO Position Statement on the Use of Supportive Personnel, 1997.
F. PRACTICE SETTINGS & CONTINUUM OF SERVICE

Cognitive-communication intervention may include screening and must include assessment, management/treatment and discharge. This is outlined in the diagram below where all shaded components must be included in any cognitive-communication intervention:

Acquired brain injury intervention usually begins in the acute care hospital, with screening occurring in the emergency room. The majority of individuals are discharged home from hospital where they will require individual, home or community-based services (Sherk, 1994). Following discharge to the community, some individuals are followed periodically by head injury or trauma follow-up clinics while others require intensive community intervention. A small percentage of individuals require long-term residential care. Speech pathology services may be required at all stages of care. Cognitive-communication disorders may not become apparent following an acquired brain injury until the individual is discharged into the community and is faced with the communicative challenges of daily life. In these cases, individuals with cognitive-communication disorders may initially access services from speech-language pathologists working in the community.
G. ACCESS TO SERVICES
Regardless of individual or environmental resource limitations, individuals should not be abandoned as detailed in CASLPO (1993) Ontario Regulation 749/93: Professional Misconduct, Section 8. In the case where the employer or funding availability restricts service the individual and caregivers should be educated regarding other treatment options (private practice, consumer groups, community-based services).

The individual’s active participation in intervention should be encouraged at all times. When the individual makes an informed request for discontinuation of services, this should also be respected. The individual should be counselled on the risks of discontinuation and alternative courses of action. These discussions should be documented including the individual’s expressed wish to proceed against the speech-language pathologist’s recommendations.

Identification and Referral Process
This section refers to identification of individuals who have a history that predisposes them to cognitive-communication disorders subsequent to acquired brain injury.

a. Referral Indicators
Referral is indicated when a change in an individual’s communicative ability is observed by the individual, the family, or health care/educational professionals with respect to the following:

- Understanding conversation, instructions, presentations or media
- Conveying verbal messages and engaging in conversation in an efficient, appropriate and effective manner
- Making oneself understood with clear, intelligible speech or voice
- Remembering the contents of conversations or experiences
- Interacting in a socially acceptable manner
- Reading for work, pleasure, community independence or school
- Writing for work, pleasure, community independence or school
- Reasoning and decision making while communicating
- Academic or vocational performance
- Responding in a timely fashion in conversation

b. Referral Process
The speech-language pathologist can accept a referral from anyone involved in the individual's care. (Where institutional policy/legislation dictates the necessity of a medical referral, this would take precedence).

Within certain practice settings, administrative policies may restrict an individual’s access to speech-language pathology services. In these situations, the member is strongly encouraged to advocate for the needs of individuals, to improve timely access to service.

H. SCREENING
1. Identification vs. Screening
Identification is the process of identifying individuals with a neurological diagnosis that may predispose them to cognitive-communication deficits. Screening, on the other hand, is defined as reviewing an individual’s cognitive-communication skills to determine the need for a full speech-language pathology assessment.
2. Screening Personnel
All individuals with acquired brain injury should be screened for cognitive-communication disorders. Ideally, a speech-language pathologist should see all individuals with ABI. Where resources are limited, an acceptable alternative would be for the member to train the front line health care professionals to recognize cognitive-communication disorders and make appropriate referrals. It is important to emphasize that self-reports of intact communication need to be verified throughout the recovery process, as insight into communication difficulties is commonly impaired.

3. Screening Procedures
Screening of cognitive-communication disorders includes:

- Interviews with an individual or a caregiver regarding past and present cognitive-communication difficulties.
- Review of relevant medical history.
- Guided observation of signs and symptoms of cognitive-communication functions during conversation.

A checklist, questionnaire, or organized recording system specific to cognitive-communication functions can be used.

4. Screening Outcomes
The outcome of the cognitive-communication screening would be one of the following:

- Referral for a full assessment.
- Recommendation to monitor the individual’s cognitive-communication functioning in daily activities.
- Education and counselling regarding the need for further investigation.
- In paediatrics, where no obvious difficulties are apparent at the time of screening, a recommendation should be made for ongoing monitoring through developmental phases.

5. Limitations of Screening
Screening for identification of cognitive-communication disorders should be used with caution. Whenever possible and practical a full SLP assessment is preferred because:

- Subtle deficits that have a devastating impact on function may be masked in the clinical environment.
- Screening tools lack the specificity to identify significant functional impairments.
- Significant impairments may only emerge in natural environments, which have complex communicative demands (e.g. work, school and community interactions).

In the case of mild traumatic brain injury there are many factors that impede identification, most prominently a low rate of initial medical diagnosis (Bazarian et al., 1999). This may be due to inappropriate exclusive reliance on neuroradiology findings especially where no pathology is identified. The cognitive deficits may be so subtle that the full effects of the injury are not apparent until the individual attempts to resume the complex cognitive demands of daily work, school, or functioning in the community (American Congress of Rehabilitation Medicine, 1993). In other cases the diagnosis may be equivocal due to complications of psycho-emotional status. At such times the speech-language pathologist must collaborate with a physician or neuropsychologist for a differential diagnosis. In both these cases the member must conduct a full assessment. In these instances, screening is not appropriate.
6. Screening Settings/Roles and Responsibilities
The following table outlines the various practice settings, the specific screening procedures and the role of the speech-language pathologist (SLP) in screening.

<table>
<thead>
<tr>
<th>Practice Settings</th>
<th>Screening Opportunities</th>
<th>SLP’s Role in Screening</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency Department of Trauma Centre or General Hospital</td>
<td>Physician conducts assessment and sends individual home with cautions. Referral criteria information is provided.</td>
<td>Ideally the SLP would educate emergency personnel to promote post-discharge monitoring of communication.</td>
</tr>
<tr>
<td>Brain Injury/Trauma Follow Up Clinic</td>
<td>Health care professionals review symptoms with the individual and/or family including reports from treating professionals.</td>
<td>The SLP should screen all clinic clients. If this is not possible, the SLP could train others to observe for subtle cognitive-communication impairments.</td>
</tr>
<tr>
<td>In patient Acute Care</td>
<td>Individual has brain injury diagnosis.</td>
<td>SLP should screen.</td>
</tr>
<tr>
<td>In patient Neuro-rehabilitation unit</td>
<td>Individual has been admitted for brain injury related impairment.</td>
<td>SLP must screen or move directly to assessment if a referral has been received.</td>
</tr>
<tr>
<td>In patient General Rehabilitation</td>
<td>Individual has been admitted to a rehabilitation unit.</td>
<td>SLP should provide education to others regarding referral criteria for SLP services.</td>
</tr>
<tr>
<td>Long Term Care and Supported Living</td>
<td>Individual has been admitted for 24-hour support due to brain injuries.</td>
<td>SLP service provides indicators for when a direct SLP screening is necessary.</td>
</tr>
<tr>
<td>Day Hospital Neuro-rehabilitation Program</td>
<td>Individual attends for a brain injury impairment.</td>
<td>SLP must screen.</td>
</tr>
<tr>
<td>Day Hospital Rehabilitation</td>
<td>Individual attends multidisciplinary rehabilitation program.</td>
<td>SLP may screen or provide education to others regarding referral criteria for SLP services.</td>
</tr>
<tr>
<td>Family Physician</td>
<td>Individual lives at home and visits family physician for regular examinations.</td>
<td>SLP should educate physicians regarding referral criteria or distribute information on cognitive-communication disorders.</td>
</tr>
<tr>
<td>Community Services (home, clinic, school, WSIB, CCAC, private)</td>
<td>The individual may access services through an agency or privately. SLP may not be on staff.</td>
<td>Where SLP services are available, SLP should screen SLP can be helpful in providing education to case managers.</td>
</tr>
<tr>
<td>Brain Injury support organizations (family support, advocacy, social, information and resources)</td>
<td>The individual can access peer support, information, group programs or recreational programs. SLP typically not on staff.</td>
<td>SLP can be helpful in providing education on indicators for cognitive-communication intervention.</td>
</tr>
</tbody>
</table>

I. ASSESSMENT

1. Case History
The speech-language pathologist should review the documentation relating to pertinent health, social, vocational and educational history as well as previous rehabilitation history as outlined in the referral process above. Wherever possible source documents should be utilized. Summaries of such information would be acceptable where reasonable efforts have been made to obtain such information or where the delay in obtaining such documentation may be of greater consequence to the patient/client than the utilization of summary information.
The speech-language pathologist is responsible for making an effort to obtain a reasonable full case history including the following:

- Objective description of the incident (e.g. ambulance/police, hospital admission or physician reports)
- Imaging reports including CT, MRI, SPECT, X-ray - Physician summaries of these reports are acceptable.
- Glasgow Coma Scale - from accident scene, admission, or nursing notes.
- Cognitive and behavioural presentation post injury – admission/chart notations, family descriptions - An estimate of length of posttraumatic amnesia may be determined from these reported observations.
- Medical Diagnoses - Preference is given to direct information from the treating physician. However, if there were delays in obtaining the medical records, summaries from other treating professionals would suffice.
- Rehabilitation History - any relevant rehabilitation assessment, treatment or progress reports
- Work History.
- Educational History- When return to school is planned; an effort should be made to obtain some documentation of previous school performance (i.e. Ontario School Record, copies of report cards, or transcripts).
- Medication
- Relevant pre-injury history - includes medical and psychological diagnoses that would impact on cognitive-communication functioning, handedness, vision, and hearing.
- Family and support systems
- Social and communicative history - includes languages spoken, read and written, social networks, pre-injury communication style, literacy, etc.
- Post-injury progress

2. Assessment Plan
An assessment plan is developed based on the expectations of a disorder profile, consistent with the history obtained and any preliminary screening information (Freund et al., 1994).

3. Assessment Measures
Assessment measures must include standardized tests and qualitative measures (checklists, observations, questionnaires, interview, rating scales etc.). There is an obligation on the part of the speech-language pathologist to be aware of the standardized tests that are available and to use and interpret them appropriately.

When preparing to comment on activity and participation limitations, an analysis of functional integrative performance is required. In order to perform this analysis, observations in real world environments must be conducted and analyzed (e.g. home-based interactions, classroom and related academic settings, employment settings, volunteer placements and structured assessment tasks such as the ‘errands task’). This requirement recognizes the valuable contribution of both qualitative and quantitative assessment measures in evaluation of acquired brain injury (Ylvisaker and Feeny, 1995). A comment on function must always be included with the proviso that standardized tests alone will not fully address functional ability. These observations will include the following:

1. A description of the communication environment
2. The ability to maintain and modulate attention
3. Ability to plan and organize time
4. Ability to complete task in the expected time frame
4. Areas of Assessment
Specific areas of assessment should include but will not be limited to the following:

| 1. | Attention and Concentration - ability to maintain focus with and without distractions, and the ability to shift and divide attention appropriately |
| 2. | Orientation |
| 3. | Verbal Memory* and New Learning - ability to process verbal information in all phases of verbal memory* (short-term, working, long-term; retention and retrieval; episodic, semantic/declarative, procedural and prospective, text and auditory), ability to apply linguistic concepts for new learning* The focus of this memory assessment is to determine the impact of potential verbal memory deficits on communication. Where Neuropsychological and Occupational Therapy assessment results are available, these should be referenced. |
| 4. | Linguistic Organization - categorization, association, sequencing, identification of salient features |
| 5. | Auditory Comprehension and Information Processing - amount, rate, complexity, efficiency |
| 6. | Oral Expression and Discourse - word finding, word usage, sentence structure, organizing ideas in conversation |
| 7. | Reading Comprehension and Reading Rate - word, paragraph, text, and educational and vocational reading relevant to demands |
| 8. | Written Expression - word, paragraph, discourse, text, educational and vocational writing relevant to demands |
| 9. | Social Communication and Pragmatics - conversation, topic introduction, topic maintenance, topic choice, turn taking, perspective taking |
| 10. | Reasoning and Problem Solving Processes |
| 11. | Executive Functions and Metacognitive Processes - goal setting, planning, initiation, monitoring, time management, impulse control |
| 12. | Insight and Adjustment to Disability |
| 13. | Speech - articulation, fluency, voice, prosody, timing, resonance |
| 14. | Nonverbal Communication - facial expression, tone of voice, eye contact, body language, proxemics |
| 15. | Consideration of visual, perceptual, hearing, pain, fatigue and other physical difficulties. |

5. Interpreting Assessment Results
Test results, together with background information, must be analyzed and interpreted by the speech-language pathologist in order to determine the individual's current disorder profile (including a description of strengths and weaknesses), the stage of recovery, and potential persisting cognitive-communication deficits. The disorder profile should take into account the functional communication demands in the individual’s environment. The effects of cognitive impairments on communication abilities should be outlined in detail.

The nature and severity of the communication deficits in terms of impairment, activity and participation restrictions and environmental influences must be described. Assessment conclusions must take into account pre-injury levels of cognitive-communication demands/function, the limits of the assessment materials and methods, other languages spoken, and cultural issues. Furthermore, cognitive-communication assessment can identify the ability to understand and appreciate the consequences of a decision and to express a choice. Therefore the speech-language pathology assessment can contribute to the evaluation of an individual's cognitive competency to participate in decision-making.

6. Identification of a Cognitive-communication Disorder
A statement is formulated regarding the individual's communication disorder for the purpose of guiding the speech-language pathology intervention.²

² Example:
Mr. X presents with moderate to severe cognitive-communication impairments characterized by:
• Deficits in complex auditory comprehension related to reduced speed of information processing
• Deficits in verbal expression including tangential and verbose communications
• Impaired pragmatics or social communication related to impulsivity and disinhibition
It is anticipated that these deficits will result in the following activity limitations…
7. Potential for Recovery
A prognostic statement for recovery of cognitive-communication skills must be formulated with caution especially in the early stages of recovery. Prognosis may be influenced by a number of factors as listed below in the Candidacy for Treatment section. The initial severity of injury may be scaled according to the Glasgow Coma Scale (Jennett et al, 1979) but this should not be the sole predictor of outcome or speed of improvement. Other factors to be considered should include: length of coma, length of posttraumatic amnesia (Gronwall, 1986), presence of executive function deficits, emotional disturbances, Activities of Daily Living (ADL) deficits and acute measures of physical, cognitive and behavioural functioning (Cifu et al., 1997). The availability of support should also be considered.

8. Candidacy for Treatment
A statement is formulated regarding candidacy for treatment. Individuals with acquired brain injury differ greatly in terms of their levels of functioning and individual needs for treatment. Factors to consider include:

- Diagnosis, neuropathology and severity of injury
- Stage of recovery and time post onset
- Length of post traumatic amnesia
- Length of coma
- Ongoing sequelae of trauma such as seizures, mobility limitations, sleep disturbances, pain
- Medication
- Pre-injury variables (e.g. education, occupation, learning styles, individual variables, interests, knowledge)
- Pre-injury difficulties (e.g. learning disability, attention deficit/hyperactive disorder, developmental delay)
- Presentation of other psychiatric and physical conditions
- Individual’s reaction to injury/awareness/insight
- Age and psychosocial stage of development
- Environmental factors
- Intellectual level
- Support from significant others
- Cultural and linguistic backgrounds
- Interruptions in treatment
- Presence of substance abuse or addiction problems
- Sensory or perceptual deficits
- Presence of spinal cord injury
- Other complications (e.g. illnesses, relocation, surgeries, funding issues, marital issues etc.)

(Prigatano, 1999; Raskin & Mateer, 2000)

J. MANAGEMENT/TREATMENT

1. Development of the Treatment Plan
The selection of treatment goals and therapeutic approaches should be driven by those deficits that have the greatest impact on an individual’s ability to interact in their environment. Following acquired brain injury, cognitive-communication disorders are more prevalent than aphasic, motor speech, or voice disorders (Halpern, 1973; Heilman et al, 1971; Sarno, 1980). These deficits have the most debilitating effects on an individual’s social, vocational, familial, and academic reintegration (Livingston & Brooks, 1988 in Ylvisaker & Szekeres, 1994).
A comprehensive treatment plan is developed following a comprehensive assessment of impairments, environmental influences and activity and participation restrictions. A treatment plan should include:

- Short-term goals (cognitive-communication objectives, and time frames)
- Long-term goals (expected functional cognitive-communication outcome)
- Types of treatment (direct versus indirect)
- An estimate as to the frequency and duration of treatment

2. Overview of Cognitive-Communication Treatment Procedures

Based on the assessment of an individual’s level of functioning in terms of impairment, environmental influences and activity and participation restrictions, cognitive-communication intervention should include the following aspects as relevant:

1. Coma management
2. Management of agitation
3. Remediation of cognitive-communication impairments including:
   - Attention (e.g. alertness, sustained, and divided)
   - Insight and Awareness (e.g. awareness of deficits and limitations both in therapy and real life)
   - Memory (e.g. encoding, storage, retrieval)
   - Information Processing (e.g. accuracy, efficiency) and Organization (e.g. simple or complex material)
   - Problem Solving and Judgement (e.g. hypothetical, community based)
   - Executive Functions (e.g. planning, organization, self-monitoring)
4. Remediation of specific communication impairments
   - Listening (e.g. hearing, auditory comprehension)
   - Speaking (e.g. speech, language, voice)
   - Reading (e.g. decoding letters, sentence and text comprehension, functional, academic)
   - Writing (e.g. letters, sentences, text, functional, academic)
   - Conversation (e.g. discourse) and Social Interaction (e.g. pragmatics)
5. Compensatory training to help the individual adapt and compensate for cognitive-communication impairments.
6. Education and training of specific cognitive and communication strategies and routines to people in the individual’s environment (e.g. family, co-workers, teachers other caregivers)
7. Prescription of specific augmentative communication devices or aids and training communication partners
8. Functional integrative training in the community (home, work, school, recreational services) to facilitate generalization through monitoring, consulting and mediator training
9. Environmental adaptation (e.g. reduced distractions and work hours, supports in school etc.)
10. Education and counselling related to cognitive-communication impairments and resulting activity restrictions provided to the individual, family and other care providers
11. Collaboration with other service providers involved with the individual
12. Involvement of family, friends, and significant others in the treatment process with the consent of the client
13. Evaluation of progress and adapting intervention to the individual’s needs including consultation with caregivers and referral to other professionals and community resources as necessary
14. Documentation of treatment progress and status at time of discharge as well as recommendations for follow-up as required
15. Follow-up and assistance with case management issues if indicated (i.e. no case manager assigned, case manager has delegated tasks, or in situations where the SLP is acting in the capacity of an assigned case manager)

3. Adapting Treatment Procedures to Levels of Cognitive-Communication Functioning

The tables below describe stages of treatment relative to the widely used Rancho Scale designed by two speech-language pathologists to describe the various levels of cognitive-communication functioning following traumatic brain injury (Hagen & Malkmus, 1979). The Rancho Scale describes the individual’s general functioning through observation at a particular time point onset; it is not predictive of outcome.
The treatment approach used by the speech-language pathologist will vary depending on the individual’s level of functioning and ability to participate actively in therapy.

The stages of recovery outlined below tend to refer to the recovery patterns associated with traumatic brain injury. Other aetiologies of acquired brain injury may not demonstrate exactly the same pattern of recovery. However, given that this chart describes useful information regarding variations in awareness and reasoning, it may be applicable to other clinical populations at some point during recovery.

These stages of recovery may not apply to children. Developmental expectations need to be considered when formulating goals and selecting treatment procedures. Regardless of aetiology or age it is important that the speech-language pathologist match the treatment procedures to the individual’s level of awareness, readiness to participate in treatment and ability to reason about incoming information.

Stages of Recovery: Stages of Treatment (An Overview)

Early Stage: Rancho Level 1-3
Cognitive-Communication Stage of Recovery and Needs
Coma Management: Individual is Minimally Responsive

<table>
<thead>
<tr>
<th>Location of Service Delivery</th>
<th>Goals of Intervention</th>
<th>Treatment Procedures</th>
<th>Desired Outcomes of Intervention</th>
</tr>
</thead>
</table>
| In Hospital (Acute Trauma Centre or Individual Coma Management Program) | 1. Provide controlled opportunities to respond  
2. Increase quality, variety and rate of responses  
3. Increase oral motor control  
4. Provide family education and training | Coma Management  
(Sensory Regulation, Sensory Stimulation, Oral-Motor Stimulation, Environmental Modification, training caregivers and family)  
Planned rest periods | Individual follows commands, shows reaction to environment and has purposeful movement. |
| In Home or Long Term Care for those who are slow to recover |                                                                         |                                                                                      |                                                                        |

Agitated Stage: Rancho Level 4
Cognitive-Communication Stage of Recovery and Needs
Acute Rehabilitation: Individual is confused and agitated.
Intensive rehabilitation is required for behavioural, cognitive, physical, and family concerns.

<table>
<thead>
<tr>
<th>Location of Service Delivery</th>
<th>Goals of Intervention</th>
<th>Treatment Procedures</th>
<th>Desired Outcomes of Intervention</th>
</tr>
</thead>
</table>
| In Hospital Acute Care Trauma Centre or General Hospital (acute bed) awaiting rehabilitation. | 1. Decrease agitation & maladaptive behaviours by addressing cognitive deficit  
2. Increase orientation by providing clear cues in the environment  
3. Modify communication and environmental stimuli to assist the brain’s reduced processing capacity  
4. Provide comfort and support  
5. Provide education and support to family and caregivers | Environmental modification, orientation aids, structure and scheduling of daily routine,  
brief cognitive-communication tasks, use of communication strategies to minimize agitation, engage in enjoyable activities to increase ability to attend, interact and co-operate, training to interpret environmental cues (calendar, room signs, therapy schedule etc.), family education & counselling | Individual can actively participate in therapy activities for 30 minutes, individual no longer needs 1:1 supervision or restraints for agitation; sleep-wake cycle is approaching normal; attends long enough to eat 3 meals per day, no longer disrupts other individuals, begins to participate in ADLs. |
|                              |                                                                         |                                                                                      |                                                                        |
Middle Stage: Rancho Level 5 & 6
Cognitive-Communication Stage of Recovery and Needs
Confusion: Individual is confused but non-agitated, requires intensive rehabilitation, 24-hour supervision and is usually not safe to go home.

<table>
<thead>
<tr>
<th>Location of Service Delivery</th>
<th>Goals of Intervention</th>
<th>Treatment Procedures</th>
<th>Desired Outcomes of Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Hospital Rehabilitation Facility, Home Individual requires less medical treatment and more rehabilitation intervention</td>
<td>1. Assess and treat cognitive-communication deficit 2. Provide emotional support and education to the family.</td>
<td>Provide stimuli, activities, and feedback that will challenge areas of deficit and capitalize on strengths. Provide therapy to improve organized thinking, memory, communication, insight, judgement, etc.</td>
<td>Individual is oriented to person/place and uses compensatory strategies to aid in recall. Individual can attend for 1 hour of activity including structured conversation. Individual can comprehend 1-2 step instructions but may have difficulty with more complex information. Individual has emerged from post-traumatic amnesia and is able to begin learning new strategies, new information. Individual can communicate needs, choices, and requests but requires assistance to communicate thoughts, ideas, opinions or summaries.</td>
</tr>
</tbody>
</table>

Late Stage or Community Phase: Rancho Level 7 & 8 and Beyond
Cognitive-Communication Stage of Recovery and Needs
Individual may appear to have returned to pre-traumatic level of functioning but closer examination reveals noticeable slowing, disorganization, and inappropriate behaviour. In conversation individual may “sound good” but test performance and/or performance on complex daily tasks reveals difficulties (i.e. general inefficiency in processing information, impaired comprehension of long or complex materials, carelessness, difficulties with reasoning, problems solving and memory for new information). These difficulties may affect academic, vocational, and social functioning as well as functioning in the family.

<table>
<thead>
<tr>
<th>Location of Service Delivery</th>
<th>Goals of Intervention</th>
<th>Treatment Procedures:</th>
<th>Desired Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home Community Return to Work Return to School</td>
<td>Effective and independent functioning at a level and in an environment that approximates pre-traumatic expectations of the individual, family, friends, employers, teachers. Rehabilitation Focus: 1. Improvements in cognitive processes 2. Functional integration of these processes in real life tasks 3. The use of strategies to compensate for deficits that do not respond adequately to remediation</td>
<td>Environmental training, strategy training, cognitive exercises, functional-integrative training, metacognitive exercises, executive functions and awareness training, content instruction and counselling.</td>
<td>1. Living independently, 2. Successfully returned to competitive employment or school 3. Social interaction has reached pre-injury level or an acceptable level to the individual 4. Avocational activities have reached pre-injury level or an acceptable level to the individual or individual has received maximum benefit from intervention and supports exist for persisting deficits</td>
</tr>
</tbody>
</table>
4. Treatment Principles

4.1. Collaborative Team Approach
A multidisciplinary program involving the SLP may include the following:

<table>
<thead>
<tr>
<th>Cognitive – Communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Promoting restoration of function where possible</td>
</tr>
<tr>
<td>• Equipping the individual with compensations for longer term or permanent impairments</td>
</tr>
<tr>
<td>• Modifying the environment in ways that may help compensate for deficits</td>
</tr>
<tr>
<td>• Readjusting expectations for changes in the individual’s performance</td>
</tr>
<tr>
<td>• Teaching content specific knowledge and skills using techniques individualized to maximize functioning</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Educating the individual about the effects of head injury to promote adjustment to deficits and active involvement in goal setting</td>
</tr>
<tr>
<td>• Educating significant others to provide understanding and support and minimize reactions and behaviours that may be maladaptive</td>
</tr>
<tr>
<td>• Educating others regarding the nature of the cognitive-communication disorder to assist the individual in optimizing compensatory communication strategies</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Psychosocial Adjustment/Adaptation</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Assisting with development of coping strategies, confidence and self-esteem</td>
</tr>
<tr>
<td>• Assisting with behavioural and emotional control</td>
</tr>
<tr>
<td>• Assisting with defining and adapting to a new lifestyle post injury</td>
</tr>
</tbody>
</table>

The above is an overview of the multidisciplinary program. The SLP should collaborate with other health care professionals (occupational therapy, physiotherapy, psychology, social work, etc.) as part of a multidisciplinary team in the provision of cognitive-communication therapy and education (adapted from Freund et al., 1994).

4.2 Client Centred Treatment
An individual-centred approach to cognitive-communication intervention is crucial. The intervention provided to an individual will vary depending upon the nature of the impairment and the activity and participation restrictions that result. Assessment and treatment must therefore be individualized and will be further influenced by factors such as the individual’s stage of recovery, the practice setting, supports available and availability of significant others.

Treatment goals must reflect the person’s strengths and weaknesses. The individual’s physical, psychological, cultural and sociological needs must be reflected as well as the individual’s pre-injury experiences, interests, and values. The individual and significant others should be actively engaged in the selection of goals and evaluation of progress. At the same time, it is necessary for the speech-language pathologist to balance the priorities of the client, whose insight may be incomplete, with the views of significant others by weighing the potential for improvement in each area.

4.3 Consent
Consent must be obtained from either the individual (or substitute decision-maker) according to the Health Care Consent Act (1995) prior to initiation of intervention. Individuals with acquired brain injury often demonstrate reduced insight resulting in impaired awareness of deficits. Therefore, the speech-language pathologist must consider competence to give consent, at all times. If the speech-language pathologist has reason to believe that the individual is not capable of giving consent, the Substitute Decisions Act and Health Care Consent Act should be reviewed for guidance.
4.4 Cognitive-Communication Focus
The selection of treatment goals and therapeutic approaches should be driven by those deficits that have the greatest impact on a person’s ability to interact in their environment. Vocational success, social relationships and academic performance are compromised by the language and communication challenges associated with closed head injury (Brooks, Campsie, Sminton, Beathe, & MacKinley, 1987; Ylvisaker & Skzkeres, 1994). The goal of maximizing a return to independent activity and participation in work, school and social interaction should always direct treatment considerations. It is imperative that the cognitive-communication deficits be addressed in addition to any coexisting deficits that together pose a major barrier to the individual’s communicative independence.

4.5 Functional Approach
Functional communication is a term used by many to describe a treatment approach that incorporates remediation of a specific linguistic or cognitive impairment in the context of daily activities (Aten, 1994). The functional approach to communication intervention focuses on the retraining of “competencies of daily life” (Mayer, Keating & Rapp, 1986) rather than the underlying deficits (Cicerone, 1996). It is recommended that this approach be included in the treatment of cognitive-communication disorders for individuals with acquired brain injury. (Hartley, 1995). This necessitates that the speech-language pathologist consider not only the individual’s level of impairment, but also include the level of individual functioning within social contexts. To do this the speech-language pathologist needs to determine the individual’s roles in their family and community. This will result in a treatment plan designed to support a return to family and community roles. The speech-language pathologist should educate those in the environment and expand community supports where possible with the individual’s consent. (Blosser & DePompe, 1989; Hartley, 1995).

4.6 Neurobehavioural Approach
As “traumatic brain injury causes a disproportionate number of prefrontal lesions” (Hart & Jacobs, 1993), individuals with traumatic brain injury are most susceptible to behavioural control problems with injury to the frontal cortex (Goldman-Rakic, 1993). The speech-language pathologist must be familiar with the neurobehavioural issues following traumatic brain injury and must be able to anticipate and assess their impact on communication. The prefrontal structures are also associated with various cognitive-communication impairments such as regulation (initiation, inhibition and direction), organization of discourse, attention, memory, and pragmatic skills (facial expression, prosody) (Ylvisaker & Szekeres, 1994). It is critical that the speech-language pathologist incorporates behavioural techniques in cognitive-communication treatment in collaboration with other professionals with this specific expertise (e.g. neuropsychology, psychiatry, behaviour therapist).

4.7 Involvement of Family & Significant Others
The importance of involving family members and significant others in the rehabilitation of individuals with acquired brain injury cannot be overstated. When working with children who have ABI, it is imperative that the SLP involve the family. It is also critical to work closely with the family of adults with ABI. Often, it is the family members, and those closest to the individual, who not only bear the responsibilities of being a caregiver, but also experience, first hand, the socially handicapping characteristics frequently seen in those who have sustained an acquired brain injury (Lezak, 1986; Lezak, 1988).

The most effective way of involving the family and significant others will vary depending on their needs and psychological readiness. Therefore, it is critical that the speech-language pathologist be sensitive to
the family’s adjustment as they involve them in the rehabilitation process (Norlin, 1986). The speech-language pathologist should acknowledge that different families, as well as different members within a family, might need different types of education and intervention (Serio et al., 1995). With this in mind, it is critical that the speech-language pathologist “shows respect for the values and dignity of each family member – not simply as a family confronted with brain trauma but as unique individuals” (Ylvisaker & Szekeres, 1994). This means that therapeutic interventions have to be adapted to the family member’s intellectual, emotional and developmental needs (Waaland & Kreutzer, 1988)

With the individual’s consent, the speech-language pathologist needs to provide feedback to the family about the impact of the identified cognitive-communication deficit on communication. The family and the speech-language pathologist should engage in ongoing dialogue wherever possible. This should include listening carefully to the family’s perspective, providing a clinical perspective, being clear about the expectations for the family and the individual, and recognizing the importance of engaging the family in the therapeutic process (Prigatano, 1999).

4.8 Developmental issues
Acquired brain injury in children occurs in the context of a developing brain. Although a child may appear to have good recovery early after injury, demonstrating recovery of prior knowledge and skills, the child may not follow the subsequent expected developmental path because of underlying cognitive impairments (Yeates et al., 2000; Williams & Mateer, 1992). Difficulties can later emerge, which are often erroneously attributed to motivational and emotional factors or viewed as behavioural problems. A child with ABI must be carefully monitored for emerging/expected cognitive-communication skills throughout the developing years into early adulthood. Changing levels of support and intervention needs will likely occur throughout a child’s academic career (Taylor & Alden, 1997).

If it should appear that a child’s communication status has recovered or plateaued and SLP service is not indicated, it is advisable for the SLP to inform caregivers or other treatment providers regarding signs of difficulty that can emerge at later stages of maturation, which may warrant re-referral. Alternatively, formal review or re-assessment can be arranged at time of discharge. Best practice dictates that caregivers be advised of the need for monitoring and re-assessment of cognitive-communication status periodically throughout a child’s academic career.

4.9 Academic issues
Following brain injury, it is important for a child to be identified in the school system as having special needs unique to ABI (Ylvisaker et al., 2001). Often students with ABI are not identified as exceptional because they do not fit the education model for students with exceptionalities (Runney, 2001). The child may have a history of academic success together with a self-concept as a normal learner. The child may have retained some past skills and information but may demonstrate erratic new learning and inconsistent performance. Good physical recovery can mask the severity of cognitive impairment. The pattern and prominence of impairments can change dynamically as the as the child develops and new skills need to be acquired. Support may need to be reactivated over time.

The SLP must interpret assessment results in terms of impact on academic performance and provide recommendations for accommodations and modifications classroom setting. The SLP can act as an advocate for the child and a resource for educators. The SLP should become familiar with the process of having a student’s needs identified and participate as actively as possible to insure these needs are being addressed. SLP assessment information should be shared with the school personnel (with parental consent) in order to assist them to develop an education plan. Intervention planning should include a focus on specific skills and strategies required for academic success. Again, the importance of monitoring the development of cognitive-communication skills throughout a child’s academic career must be emphasized.
4.10 Accommodating for Level of Insight and Motivation

Decreased insight into deficits such as lack of awareness (Prigatano, 1999) and denial of deficits are common sequelae following acquired brain injury. It has been well documented that individuals with acquired brain injury often underestimate the severity of problems they encounter. (Prigatano & Shacter, 1991).

It is critical to distinguish between deficits of insight and denial in order to determine the appropriate treatment approach. Decreased insight results in a lack of awareness of deficits and a lack of understanding of the impact of deficits on function. This must be addressed as part of an individual’s cognitive-communication rehabilitation. Denial of deficits is a psychologically based condition and may be a normal reaction to the trauma. However denial of deficits may severely interfere with rehabilitation efforts and may best be addressed in collaboration with other professionals such as psychologists and socials workers.

When treating awareness deficits the following interventions should be considered in individual or in group treatment (Prigatano & Shacter, 1991):

- SLP provides feedback to the individual regarding their cognitive-communication strengths and weaknesses in a form the individual can understand. Video tapes may be helpful (Prigatano, 1999).
- SLP employs strategies to assist the individual in developing insight and awareness into their cognitive-communication deficits.
- SLP involves the individual in goal setting to whatever extent possible to ensure that the therapy content is meaningful to the individual.

SLPs are encouraged to work with other professionals in developing these groups. It is also critical that the speech-language pathologist collaborate with team members and family members to develop consistent approaches to overcome lack of awareness and lack of motivation.

In cases where an individual may not be a candidate for small group therapeutic activities and where awareness deficits are interfering significantly with rehabilitation potential, the individual with the brain injury should be referred to a psychologist or neuropsychologist with expertise in the area of brain injury rehabilitation for individual psychotherapy.

4.11 Computer Use in Therapy

Computers and other digital technologies can offer many options in delivery of treatment and providing compensatory techniques but should be used with caution (Sohlberg & Mateer, 1989). Computers may be used as an adjunct to assist the individual to interact within their environment and training must be provided in using the computer to remediate or compensate for deficits. The speech-language pathologist should only utilize computerized therapy programs to treat those cognitive-communication deficits that appear to respond well to repetitive, objective and consistent practice (attention, visual processing and reasoning or problem solving). The speech-language pathologist should avoid the use of computerized therapy programs to treat deficits that are not enhanced by such practice. (e.g., memory and pragmatics). It is also important that, when recommending a computer device, the speech-language pathologist consider all deficits that may reduce the effectiveness of the device (e.g., visual scanning, field cuts, physical limitations). This can be optimally achieved within a team approach.

4.12 Group Treatment
Group treatment can be a very effective means of intervention for cognitive-communication deficits. Groups can be developed to target basic cognitive-communication skills such as orientation or information processing (Elman, 1999). They can also be developed to target the more complex and dynamic deficits of social interaction and higher-level information processing in conversation. Groups also offer individuals with acquired brain injury the opportunity to gain support and benefit from the experience of their peers as well as providing a non-judgmental environment to experiment with compensatory strategies and learn appropriate interactive skills.

Group treatment is also a cost effective means of offering treatment. However, it is imperative that the speech-language pathologist not offer group therapy in lieu of individual therapy, where individual therapy is indicated and resources are available. It is critical that the speech-language pathologist have clear goals for both the group and the individuals within the group before beginning treatment.

K. DISCHARGE CRITERIA/PLANNING

Discharge planning serves to direct interventions toward an ultimate goal of appropriate and timely discharge from current service or transfer to another setting. Ideally, the SLP and the individual (together with the treatment team) determine the appropriate time and conditions of discharge from SLP services or transfer of SLP service to another setting, based on an evaluation of progress made relative to the goals of intervention. In circumstances where the criteria for discharge/transfer are beyond the SLP’s influence, the SLP should make every reasonable effort to educate the individual and his/her caregivers regarding other treatment options as indicated (private practice service providers, case managers, consumer groups, community based services).

Where an individual chooses to discontinue the speech-language pathology services against advice, the individual should be informed of the risks and then counselled regarding the best strategies under the circumstances. The individual’s active participation should be encouraged at all times. When the individual makes an informed request for discontinuation of services, this should be respected. All aspects of such discussions should be documented in detail.

L. REPORTING REQUIREMENTS

Documentation of assessment findings should be completed in accordance with CASLPO’s Draft Regulation For Records within a reasonable time frame. Assessment findings need to clearly describe the relationship between cognitive factors and communication functions. The effect of the cognitive-communication impairments on functional activities and life participation needs to be outlined using language that can be readily understood by all audiences. Management and treatment recommendations should be included when further intervention is indicated based on assessment results.

Documentation of treatment must be consistent with CASLPO’s Draft regulation for Records. Changes in cognitive-communication status and the revision of intervention goals based on an individual’s progress must be included in the record.

M. CLINICAL COMPETENCIES

1. Screening
1.1 Demonstrates knowledge and skills to select or develop appropriate screening measures, administer them, interpret results to identify presence or absence of signs of cognitive-communication disorders and refer for further assessment.

a) Knowledge of roles and responsibilities of the other health care professionals who are involved in early identification of mild brain injury and related disorders.
b) Knowledge of training methods and consultation processes needed to encourage others to administer screening protocols and refer appropriate candidates for further assessment.

2. Assessment
2.1 Demonstrates knowledge of how and when to request a referral for assessment of cognitive-communication status, and of how and when to make a referral to other health care professionals, to enhance the team approach in providing a comprehensive assessment and treatment plan.

a) Knowledge of roles and responsibilities of the other health care professionals who are involved in assessment and intervention within the member’s practice or professional community.

b) Knowledge of when to refer to another health care professional.

2.2 Demonstrates accurate selection, administration and interpretation of clinical assessment procedures in order to identify the presence, nature and functional implications of cognitive-communication disorders in the caseload serviced by the member.

a) Communication of results of assessment or intervention to other health care professionals, individual, family, and other professionals with client consent.

b) Elicitation of results of assessment or intervention from other health care professionals.

3. Treatment
3.1 Demonstrates knowledge and skills to formulate long and short-term goals for intervention.

a) Knowledge of the functional effects of cognitive-communication disorders on daily activities in the home, social, leisure, and educational and vocational contexts.

b) Knowledge of the relative benefits of various treatment models.

c) Knowledge of the roles and responsibilities of other health care professionals on the treatment team.

d) Knowledge of the legal and insurance parameters, where necessary.

e) Knowledge of outcome measurement in determining progress.

3.2 Demonstrates knowledge and skills of how and when to incorporate supportive individuals in the patient/client’s environment, in the design and provision of treatment plans and programmes.

4. Management
4.1 Demonstrates knowledge and skills to develop consultation and training programs to improve the ability of other health care professionals to manage the effects of cognitive-communication disorders as they present in their clients.

4.2 Demonstrates knowledge and skills to develop consultation and training programs to improve the ability of family members to manage the effects of cognitive-communication disorders in family interactions.

5. Discharge
5.1 Demonstrates the ability to arrange for appropriate follow-up at discharge.

a) Identification of individual’s need and schedule for follow-up, re-assessment and discharge.

b) Knowledge of additional services which may be appropriate and how to facilitate a referral.
6. Advocacy
6.1 Demonstrates ability to provide public education and advocacy for individuals with cognitive-communication disorders.

a) Knowledge of public education resources and procedures for increasing awareness of the needs of individuals with cognitive-communication disorders.
b) Knowledge of available educational aids designed to enhance public and professional awareness regarding cognitive-communication disorders.

Where members judge that they do not have the required competencies to treat this population, they are encouraged to refer to more experienced colleagues. In cases where such a referral is not possible, it is recommended that a mentoring or consultative relationship with a more experienced colleague be instituted. Speech-language pathologists with expertise are strongly encouraged to share their knowledge by providing mentorship opportunities to less experienced members.

7. Continuing Education
7.1 Demonstrates continual acquisition of knowledge and skills necessary to provide high quality service to individuals with cognitive-communication disorders.

a) Knowledge of current literature and research
b) Knowledge of current treatment modalities and approaches
c) Allocation of a portion of continuing education credits to cognitive-communication disorders of acquired brain injury
c) Acquisition of training required to utilize specialized therapeutic techniques

N. RESOURCE REQUIREMENTS

Materials needed for the assessment and treatment/management of individuals with cognitive-communication disorders include:

Required
1. Audio recording equipment
2. Standardized tests in all areas of clinical assessment (Freund et al., 1994; Depompei, 2001; Ylvisaker, 1985)
3. Forms and materials for non-standardized/qualitative assessment procedures e.g. checklists, interviews, disability measures, behavioural observation charts, questionnaires
4. Therapy materials (Freund et al., 1994; Depompei, 2001; Ylvisaker, 1985)
5. Environments that may be controlled with respect to sensory distractions, physical comfort and physical access (i.e. quiet office space, quiet room in individual’s home where distractions can be eliminated).
6. A consistent method of producing reports and keeping records

Optional
7. Means to go on community therapeutic visits (e.g. transportation for disabled individuals, time allotted)
8. Video or digital recording equipment
9. Computer programs for assessment and treatment
O. PRECAUTIONS

1. Safety Precautions for the Individual with Acquired Brain Injury
The primary risks for individual safety change from acute through to post hospital intervention settings. These are listed below as recommended precautions.

### Acute Care

<table>
<thead>
<tr>
<th>Risk Category</th>
<th>Speech-Language Pathologist’s Best Practice in Reducing the Risk of Harm</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Medical Complications which may include: raised intracranial pressure,</td>
<td>• Read the medical chart daily until condition stabilizes</td>
</tr>
<tr>
<td>respiratory failure, hydrocephalus, subdural hematoma, vasospasm, cardiac</td>
<td>• Consult with attending nurse or other health care practitioner who has</td>
</tr>
<tr>
<td>arrest, infection, fever, drug reactions, seizures, aspiration, c-spine</td>
<td>provided treatment that day</td>
</tr>
<tr>
<td>injury, pressure sores, post anoxic demyelination</td>
<td>• Attend rounds when possible</td>
</tr>
<tr>
<td>• Death related to complications</td>
<td>• Consult with relevant members of the treatment team prior to initiating</td>
</tr>
<tr>
<td>• Government policy on restraints</td>
<td>invasive assessments or interventions such as dysphagia assessments,</td>
</tr>
<tr>
<td></td>
<td>coma stimulation, or trach occlusion for voicing assessment</td>
</tr>
<tr>
<td></td>
<td>• Report any significant changes in responsiveness, respiration, or</td>
</tr>
<tr>
<td></td>
<td>cognition to the attending nurse or physician and document concerns in</td>
</tr>
<tr>
<td></td>
<td>the medical chart.</td>
</tr>
<tr>
<td></td>
<td>• SLP should become familiar with hospital infection control policies</td>
</tr>
<tr>
<td></td>
<td>and procedures.</td>
</tr>
<tr>
<td></td>
<td>• Hand washing prior to and after intervention is essential.</td>
</tr>
</tbody>
</table>

### Acute Care or Individual Rehabilitation

<table>
<thead>
<tr>
<th>Risk Category</th>
<th>Speech-Language pathologist’s Best Practice in Reducing the Risk of Harm</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Removal of feeding tubes</td>
<td>• For all agitated individuals, observe carefully as you enter the room.</td>
</tr>
<tr>
<td>• Removal of IV</td>
<td>• Introduce yourself &amp; your purpose calmly and clearly</td>
</tr>
<tr>
<td>• Removal of catheter</td>
<td>• Note use of restraints and do not remove restraints unless you are familiar with the individual’s usual behaviours.</td>
</tr>
<tr>
<td>• Self Injury</td>
<td>• Obtain assistance from nurse or physiotherapist or other trained individual for repositioning to assist the individual in becoming</td>
</tr>
<tr>
<td></td>
<td>as comfortable as possible (bed rails up pads in place).</td>
</tr>
<tr>
<td></td>
<td>• When removing restraints consult with appropriate personnel, follow institutional polices</td>
</tr>
<tr>
<td></td>
<td>• Recognize that agitation occurs due to confusion, feelings of being overwhelmed with incoming stimuli, and fear</td>
</tr>
<tr>
<td></td>
<td>• To decrease agitation, provide structure, reduce background noise, present instructions slowly, calmly, and clearly, and provide</td>
</tr>
<tr>
<td></td>
<td>abundant direction, encouragement and support</td>
</tr>
<tr>
<td></td>
<td>• Be aware that agitation can increase with fatigue and work within the individual’s tolerance for activity.</td>
</tr>
<tr>
<td>Wandering</td>
<td>• Note signs of potential wandering before it happens</td>
</tr>
<tr>
<td></td>
<td>• Read hospital/facility policy on wandering, use of restraints, etc.</td>
</tr>
<tr>
<td></td>
<td>• Report potential for wandering to relevant team members and those responsible for 24-hour care.</td>
</tr>
</tbody>
</table>

Preferred Practice Guideline for Cognitive-Communication Disorders · Approved September 2002
College of Audologists and Speech-Language Pathologists of Ontario
## Community /Supporting Independent living

<table>
<thead>
<tr>
<th>Risk Category</th>
<th>Speech-Language Pathologist's Best Practice in Reducing the Risk of Harm</th>
</tr>
</thead>
</table>
| Significant errors in conducting own affairs (self care, financial, parenting, legal). | - Systematic team assessment in the individual’s independent living environment.  
- Gradual transitioning to independence  
- Be proactive in providing appropriate communication supports for legal and financial situations (i.e. communication aids, court assistance, translation of documents etc.)  
- Be familiar with legislation such as Substitute Decisions Act, Advocacy Act and Consent to Treatment Act Child and Family Welfare Act. |
| Driving safety violations or accidents | - Consult with occupational therapist and others as to best means of having the individual assessed and provide information on do’s and don’t s consistently as a team. |

## Home and Community

<table>
<thead>
<tr>
<th>Risk Category</th>
<th>Speech-Language Pathologist's Best Practice in Reducing the Risk of Harm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inability to access emergency services</td>
<td>- Consult with occupational therapist and others regarding ability to access 911/emergency response and cognitive and communicative factors that might interfere with access.</td>
</tr>
<tr>
<td>Individual injury related to errors in judgement and social inappropriateness</td>
<td>- Recognize potential for errors in judgement or pragmatics (social inappropriateness), provide cues and training, educate family members, and state the potential impact of these in reports and in treatment planning</td>
</tr>
</tbody>
</table>
| Overdose or inappropriate intake of medication due to problems with memory or judgement | - Anticipate difficulties with medication whenever there are memory difficulties. Assess this as a team.  
- Provide compensatory strategies in the home to increase independence in medication administration  
- Put appropriate supports in place. Consult with the occupational therapist and others as the Attendant Care forms are being completed. |
### All Stages of the Continuum

<table>
<thead>
<tr>
<th>Risk Category</th>
<th>Speech-Language Pathologist’s Best Practice in Reducing the Risk of Harm</th>
</tr>
</thead>
</table>
| Social Isolation | • Treat pragmatics or social interaction skills as a priority  
• Provide systematic feedback on communication appropriateness  
• Educate family and significant others about the relationship between cognitive-communication difficulties and social interaction skills  
• Involve family, friends and significant others in therapy as appropriate  
• Incorporate peer group training and social skills opportunities in therapy  
• Link the individual with community resources, and peer and interest groups  
• Work as a team to build in social time within the therapy schedule  
• Refer to appropriate health professionals, OBIA and local support groups |
| Emotional or Psychosocial | • Anticipate emotional repercussions following this traumatic event  
• Anticipate emotional concerns and refer for counselling and support proactively (social work, psychology, chaplain)  
• Involve family members as part of the team  
• Provide education and support as needed  
• Allow space and time for the emotional impact of the situation  
• Recognize that rehabilitation must include time for mourning, frustration, anger, and adjustment and be flexible in adjusting therapy activities to the individual’s needs as required |
| Psychiatric Condition | • Take all suicide threats seriously and make appropriate referrals  
• Immediately contact necessary support such as 911/emergency response, psychologist, case manager, or primary care physician.  
• Ensure the immediate environment is as safe as possible (e.g. remove harmful substances and devices)  
• Stay with the individual if necessary |

### 2. Precautions for Speech-language pathologist Safety

<table>
<thead>
<tr>
<th>Risk Category</th>
<th>Speech-Language Pathologist's Best Practice in Reducing the Risk of Harm</th>
</tr>
</thead>
</table>
| Risk of infection | • Hand washing  
• Follow facility infection control procedures |
| Risk of injury due to assault | • Review facility policies and procedures on behavioural interventions before meeting with individuals with ABI.  
• Learn to recognize the signs of agitation and avoid antecedents that trigger it if they are known.  
• Maintain appropriate individual space until individual is calmed down  
• Adopt a communication style that decreases agitation- introduce self and task slow structured, calm, clear and encouraging  
• Education in non violent crisis intervention may be helpful |
| Injury from lifting and assisting with transfers | • Seek assistance from nurses, attendants, and health care aides for lifting  
• Follow physiotherapist and occupational therapist recommendations for transfers and lifts (e.g. Safe back care principles) |
Practicing work studio supporting the Other (1988).

The speech-language pathologist must have individual liability insurance.
Individual Liability Insurance of $2,000,000 is the recommended amount as of 2001.
Speech-language pathologists who transport individuals should ensure that they have adequate insurance coverage in case of injury to themselves or the individual.

APPENDIX A: Treatment Efficacy

The issue of treatment efficacy has gained importance in all areas of health care. In the area of cognitive-communication disorders, efficacy research is required, primarily because until recently, language disorders were better defined than cognitive-communication disorders. This situation is not unique to speech-language pathology. A parallel can be found in current neuropsychological literature which stresses the importance of gathering efficacy data as practitioners in their field take an increasing role in the cognitive rehabilitation of brain injured individuals (Giansutsos, 1991; Levin, 1992).

The difficulties associated with efficacy research in the area of cognitive-communication have been discussed (Ylvisaker & Urbanczyk, 1990). The need for a valid and reliable standardized tool that measures functional abilities and evaluates the benefits of treatment techniques on functional outcomes has also been emphasized (Adamovich, 1998). In spite of this, there is good evidence of the benefits of speech-language pathology services for the cognitive-communication deficits of traumatic brain injury (Coelho, DeRuyter & Stein, 1996).

There have been a few well-designed studies demonstrating treatment effectiveness, for example, Ehrlich and Sipes (1985) found significant improvement in the number of targeted pragmatic skills following a group therapy program involving six subjects. Wiseman-Hakes et al., 1998 reported clinically relevant and statistically significant changes in a group of adolescents who received intervention for pragmatic skills. Similar findings were reported by Gajar, Schloss, Schloss and Thompson (1984), Milton, Tunstall, and Wertz (1983), Stanton, Yorkston, Aune, and Hedges, (1982), and Morgan, Chapman, and Tokarski (1988). Thomas-Stonell, Johnson, Schuller and Jutai (1994) found that a computer-based program was an effective enhancement to traditional rehabilitation in the area of skills development. In a review of the efficacy literature in cognitive-communication disorders, Coehlo et al. (1996) cited studies that examined treatment effectiveness in the areas of attention, memory, executive functions, social skills training and community re-entry.

Other studies examine the effectiveness of a multidisciplinary approach, in which the speech-language pathologist is one of a team of professionals providing treatment. Cope and Hall (1982) present evidence supporting the efficacy of early intervention following acute injury. A study by Mackay, Bernstein, Chapman, Morgan and Milazzo (1992) used a retrospective approach to confirm that the long-term outcomes of individuals who had received intervention by a specialized acute care trauma team were better than the outcomes of those who did not receive formalized trauma intervention. Ruff and Niemann (1990) found that treatment in a structured setting, with a trained professional and psychosocial group support, had more positive effects on cognitive functioning independent of the particular method of treatment. Spivak et al., 1992 found that those who received more intensive multidisciplinary therapy (including speech pathology intervention) achieved better outcomes on standardized measures. In a pilot study, Hall, MacDonald, and Young (1992) determined specific directed stimulation elicited more complex responses from coma individuals than stimulation available in the routine environment. The work of Sohlberg and Mateer (1989) represents the integration of knowledge from the fields of neuropsychology and speech-language pathology and describes a number of efficacy studies.

Practicing speech-language pathologists are not typically provided with the time or resources to conduct large, well-controlled studies using group treatment designs. In addition, ethical issues surrounding
withholding treatment limit the use of traditional control group procedures. As well, in looking at therapy effectiveness studies in the TBI population, one cannot ignore the difficulty of applying generic approaches with such a heterogeneous population.

Retrospective case studies have been an alternative means for clinical professionals to disseminate new information and generate discussion. While these studies do not carry the same weight as experimental research, a number of case studies in the area of TBI rehabilitation present compelling anecdotal evidence for the effectiveness of speech-language pathology intervention. Case studies by Giles, Fussey, and Burgess (1988) and Lennox and Brune (1993) describe successful treatment of specific verbal interaction skills. McHenry, Wilson, and Minton (1994) have detailed successful treatment of dysarthria following TBI. The recovery of intelligible speech following therapy many years post-injury has been described by Workinger and Netsell (1992). Carlson and Buckwald (1993) outline successful training of communication skills prior to vocational placement.

A more rigorous research design, which is still within reach of many speech-language pathologists, is the single subject design. This approach has received increasing attention in the field of speech-language pathology (e.g., Connell and Thompson, 1986; Kent, 1985; McReynolds and Kearns, 1983; McReynolds and Thompson, 1986) because it allows the accumulation of a significant sample size in a clinical setting, allows each subject to serve as his/her own control, and does not require withholding treatment to any subjects in the study. Sohberg and Mateer (1989) include an excellent review of this research design and provide practical suggestions for its implementation.

The developing field of cognitive-communication disorders offers practicing speech-language pathologists a unique opportunity to make a significant contribution to available efficacy information. Single case design is a viable quality assurance activity for individual speech-language pathologists and departments, as well as a basis for generating efficacy data for other speech-language pathologists. As new assessment tools are developed, speech-language pathologists may offer to participate in the standardization process, thus assisting to increase the validity of measures that may be used in efficacy research. It is crucial for all health professionals to recognize the need to prove that treatment principles and practices are sound, in order to justify spending health dollars on speech-language pathology services for brain-injured individuals and to ensure that individuals receive the most effective and efficient treatment methods available.
APPENDIX B: Glossary

Acquired Brain Injury  - Injuries to the brain that are not congenital, do not occur as part of the developmental process, have a rapid onset related to sudden trauma or disease process and are non-progressive in that degeneration is not expected.  Acquired brain injuries include the following neurological diagnoses: traumatic brain injury, stroke, meningitis, encephalitis, brain tumour, or anoxia.

Anoxia – A total lack of oxygen supply to the tissues.

Assessment – Use of a combination of both formal and informal measures to observe and record a person’s functioning in a variety of areas. This is done in order to gain a complete understanding of a client’s strengths and weaknesses so as to allow the therapist to plan a treatment program.

Attention/Concentration - The ability to focus on a given task or set of stimuli for an appropriate period of time.

Attention, Selective - The focus of attention on a particular action/task or train of thought, at the exclusion of others.

Attention, Sustained - The ability to work on a particular task or train of thought over an extended period of time.

Attention, Divided – The ability to attend to two or more inputs or activities at the same time.

Aphasia - An acquired language disorder caused by damage to the brain in the hemisphere responsible for language, usually the left hemisphere. Aphasia affects all modes of expressive and receptive language including speaking, writing, reading, and understanding of spoken language.

Case Manager - A person who facilitates a patient’s access to appropriate medical, rehabilitation and support programs and coordinates the delivery of these services.

Client - One who engages the professional advice or services of another, such as a speech-language pathologist.

Client-Centred Care – The active participation of the client in negotiating with the therapist goals of treatment. Throughout the process, the therapist adapts treatment to meet the client’s needs and enables the client to make informed decisions.

Cognition - The mental activity by which humans acquire, process, store, and act on information from the environment. This involves processes as such as perceiving, remembering, reasoning, judging, and problem solving.

Cognitive-communication disorders - Communication disorders resulting from underlying, generalized cognitive deficits due to neurological impairment

Compensatory strategies - Strategies used to help individuals overcome the impact of their disabilities.

Computed Axial Tomography (CT) Scan- A series of computer assisted X-rays taken at different levels of the brain that allows the direct visualization of the skull and intracranial structures.
Dysarthria - A speech disorder resulting from a weakness, paralysis, or incoordination of the speech musculature that is of neurological etiology.

Executive functions – The ability to plan, sequence, self-monitor, self-correct, inhibit, initiate, control alter or assign priority to behaviour. Studies have associated executive functions with the prefrontal cortex.

Functional Integrative Performance – The ability of an individual to perform in a variety of real world environments.

GCS/Glasgow Coma Scale – A system used to assess the degree of brain impairment and to identify the seriousness of injury. The scale involves rating an individual on three determinants: eye opening, verbal responses and motor response, all of which are evaluated independently according to a numerical value that indicates the level of consciousness and degree of dysfunction. Scores run from a high of 15 to a low of 3.

Goals – The objective(s) that the therapist and client set to attain during the course of therapy.

- Long-Term Goals are set as the end point of the treatment process and may take several years and different forms of treatment to attain.
- Short-Term are the more immediate goals of the current intervention program. These are the goals, are set to achieve the ultimate long-term goals of therapy.

Hypoxia – reduction of oxygen supply to tissue below physiological levels despite adequate perfusion of tissues with blood

IEP/ Individual Education Plan - A document that is created by the school and the parents to identify a student's special needs and ways of fulfilling those needs within the school program.

Incidence - Rate of occurrence.

Insight - The extent to which a person is able to accurately judge his/her own strengths and limitations.

Information processing – The stages (perception, encoding, and memory) sensory data must pass through in order to be understood.

The International Classification of Functioning and Disability (ICIDH-2) – This classification system was first issued by the World Health Organization in 1980. Its three-part structure is used world-wide as both a scientific model of disability and the basis for a common language for clinical use, data collection, and research. In 1995, WHO began a consensus-based process that lead to a revised classification system issued in 2001, entitled ICIDH-2.

Language – The organized system of written symbols and vocal sounds with which humans communicate thoughts, ideas, or emotions.

Learning – A change in a person's understanding or behaviour due to experience or practice.
Memory - The process of organizing and storing mental representations. There are four general stages:

- **Sensory memory:** A very brief stage in which perceptual (visual, auditory) information is registered.
- **Short term memory:** In this stage the perceptual information is retained and coded so that it can pass into long-term memory.
- **Working memory:** Similar to short-term memory, but with an added emphasis on active processing of information both from sensory memory and long-term memory.
- **Long-term memory:** In the final stage, information is transferred into permanent storage for future recall. Information may be divided into three general categories: episodic (events), semantic (facts/concepts), and procedural (methods/skills).

**Magnetic resonance imaging (MRI)** - The use of magnetic resonance to visualize internal organs of the human body and obtain diagnostic information.

**Metacognition** – The awareness of one’s own cognitive processes in learning and understanding; insight into accurately judging one's own cognitive strengths and limitations.

**Mild Brain Injury** - mild brain injury is suspected where there is:
- Rapid acceleration/deceleration or rotational injury
- Amnesia for the events surrounding the injury
- Period of confusion at time of injury
- Scalp and/or other facial injuries
- Post-traumatic amnesia
- Cognitive-behavioural changes post injury
- The individual may have negative CT scan but still have an acquired brain injury

**Multidisciplinary team** – An approach to care where professionals from various disciplines set goals for evaluation and treatment based on professional expertise in conjunction with other team members.

**Nonverbal communication** – The use of nonverbal methods such as facial expression, eye contact, touch, and body movement to convey meaning.

**Ontario Student Record/OSR** - The record of a student's educational progress through the elementary and secondary school system in Ontario mandated by the Ontario Education Act.

**Positron Emission Tomography (PET)** - A scanning technique used in conjunction with small amounts of radiolabeled compounds to visualize brain anatomy and function.

**Pragmatics** - Rules underlying an individual’s functional use of language in its social context.

The **prefrontal cortex** – An interconnected set of neocortical areas that have an overlapping pattern of connectivity with all sensory neocortical and motor systems and a wide range of subcortical structures. The prefrontal cortex comprises 30% of the total cortex and is significantly larger in humans.

**Prevalence** - Percentage of a population that is affected with a particular disease at a given time.

**Problem-solving** – An individual’s ability to use cognitive processes when trying to accomplish a task.
Prognosis - The prospect for recovery from a disease or injury as indicated by the symptoms of the individual as well as a variety of other factors, such as nature of injury and co-existing conditions.

Proxemics – The study of spatial territory and personal space.

Screening – Use of techniques such as observation, checklists or short assessments, to identify individuals in need of in depth assessment and to identify areas, which may require more evaluation.

Social communication – The occurrence of communication in natural settings. The modification of communication based on interaction with others. Requires the processing of both verbal and nonverbal input from the environment, and retention of what has occurred earlier in the interaction.

Single-Photon Emission Computerized Tomography (SPECT) - Scanning involving the rotation of detectors around a patient, which acquires information on the concentration of radionuclides, introduced to the patient's body to visualize brain anatomy and function.

Substitute Decisions Act - The Substitute Decisions Act of 1995 is the law in Ontario concerning continuing powers of attorney for property. It also introduced a new power of attorney for personal care.

Traumatic brain injury - A brain injury resulting from external physical damage or wound, such as a blow to the head.

Visual field cut or hemianopsia - Blindness for the right or left half of vision in each eye.

Visual perception - A person’s ability to recognize and discriminate between visual stimuli and to interpret these stimuli through association with earlier experiences.
APPENDIX C: Practice Guidelines Summary Statements

Guideline for Screening
SLP must demonstrate participation in screening appropriate to the setting as outlined above.

Guidelines for Assessment
SLP’s assessment must include:
• Full case history including components above or reasonable statement as to rationale for exclusion
• Summary of client/family concerns and goals
• Use of standardized and qualitative measures
• Interpretation of pre-injury cognitive-communication status (education, vocation, social, language)
• Analysis and reporting of results in the following impairment areas or a reasonable statement as to rationale for exclusion:
  • Attention/Concentration
  • Verbal memory/New Learning
  • Linguistic Organization
  • Auditory Comprehension and Information Processing
  • Verbal Expression and Discourse
  • Reading Comprehension
  • Written Expression
  • Social Communication and Pragmatics
  • Verbal Reasoning and Problem Solving
  • Executive Function particularly pertaining to communication
  • Consideration of Insight and Awareness
  • Speech and Nonverbal Communication
• Analysis and reporting of results regarding activity limitations and participation restrictions related to the impact of cognitive-communication deficits on daily functioning (work, school, social, community independence, family)

Guidelines for Goal Setting and Development of the Treatment Plan
In setting goals for treatment the speech-language pathologist must show evidence of the following:
• Active involvement of the individual and significant others in goal setting to the extent to which they are able based on executive functions, awareness, insight, and pre-morbid abilities.
• Use of individual’s strengths to compensate for areas of weakness
• Identify and prioritize treatment goals based on:
  • Needs identified by individual
  • Identified impairments, activity and participation restrictions
  • Cognitive functions hierarchy
• Prioritize treatment goals considering:
  • Individual’s immediate and long term cognitive-communication needs
  • Patterns of recovery
  • Probability of overall improvement
  • Environmental variables
• Operationalize goals in a manner which includes quantitave and/or qualitative evaluation of progress
• Specify the treatment approach related to each goal
• Determine the frequency and duration of treatment
• Determine the level of involvement (direct, indirect, mediator, consultation, monitoring)
• Set estimated timelines for completion of goals and need for follow-up or re-evaluation
Guidelines for Collaboration and Holistic Intervention
The speech-language pathologist must:
- Demonstrate involvement of family and significant others
- Demonstrate education of family and significant others
- Demonstrate appropriate referral/liaison regarding psychosocial concerns
- Demonstrate collaboration with other professionals in the form of meetings, sharing of information, correspondence
- Demonstrate awareness of and compensation for physical constraints

Guideline for Treatment Procedures, Approaches and Methods
- The speech-language pathologist must state the treatment methods selecting from the list above, and report these in progress and discharge reports.
- The speech-language pathologist must convey these treatment methods to the individual involved in treatment and/or the family and significant others (with patient/client consent). This information must be conveyed in easily understood language.
- The treatment approach must correspond to the individual's level of cognitive recovery as outlined below.
- When there is a treatment team, the SLP must attend team meetings, and communicate with significant others involved in the individual's rehabilitation program (with patient/client consent).
- The SLP must demonstrate inclusion of functional treatment in that at least some of the goals, activities and contexts are related to the individual's daily life and environments (home, school, work, community, etc.)
- The SLP must demonstrate that neurobehavioural issues have been considered when selecting intervention methods and monitoring progress.
- The SLP must demonstrate at least some involvement of family or significant others through assessment interview, ongoing dialogue, education, goal selection, feedback, monitoring or participation in treatment.
- The SLP must demonstrate that deficits in insight, awareness, or motivation have been addressed throughout the course of therapy.

Guideline for Discharge Planning
Procedures for discharge planning must consider the following:
- A potential time-line for recommended services based on initial presentation, treatment/management goals and prognosis for change.
- Ongoing review of progress in the treatment/management plan
- Coordinated transfer to another SLP, if indicated and if possible
- Coordinated referral to another professional discipline, if indicated and if possible.
- A statement that no further intervention is indicated based on assessment findings and/or treatment progress.
- Provision of information to the individual and/or caregiver regarding the reasons for discharge and/or transfer-referral to another service
- Follow-up plan regarding how to re-initiate service, if indicated and possible.
Guideline for Documentation of Assessment Findings

- An assessment report must address the following areas:

1. History
   - Injury/Illness History
   - Pre-Injury Social, Educational and Vocational History
   - Relevant Pre-Injury Health History
   - Family and Social Support Systems

2. Assessment Procedures
   - Tests and Measures Used
   - Dates and Locations of Assessment
   - Description of the Testing Environment

3. Evaluation
   - Behavioural Observations
   - Current Physical and Psychosocial Status
   - Comment on all areas of function assessed (see section on assessment)

4. Summary
   - Summary of Findings
   - Impact of Cognitive-Communication Deficits on Daily Functions: (home, social, leisure, and educational/vocational settings)
   - Recommendations: goals, duration of intervention, costs (where applicable)

- Attempts must be made to use clear comprehensible language to enhance comprehension.

Guideline for Reporting Progress and Discharge

- The SLP must report progress according to short term and long term treatment goals
- Reasons for discharge must be documented
- Referrals to others must be documented
- Information may only be shared with others if the patient/client has given written consent.

Guideline for Resource Requirements
The SLP must have the required equipment. (Means of transportation is required for community care.)

Guideline for Precautions
The SLP should reduce the risk of harm by taking reasonable precautions according to the risk categories by practice setting.
APPENDIX D: References


Depompei, Roberta (2001). Youth with TBI: cognitive-communicative and behavioural issues for reintegration to school and community. Conference hosted by the Paediatric Acquired Brain Injury Community Outreach Program. London, Ontario


MEMBERSHIP CONTRIBUTIONS TO DEVELOPMENT

EXPERT PANEL

Co Team Leaders
Elyse Shumway
Sheila MacDonald

Expert Panel Members
Lynn Ellwood, Mary Ann Neary, Lisa Jadd, Diedre Sperry, Donna Zmenak, Monique Lugli

Corresponding Members
Jill Clements-Baartman, Sherry Hinman, Barbara Hughes-Banderob, Kerry Erle, Alex Rowland, Maria Scaringi, Sonya Torreiter, Joanne Ruediger, Sandra Sanmartin, Stephanie Muir-Derbyshire, Rick Welland, Monica Nahwegahbow, Joanne Wilk, Elizabeth Hanna, Karen Ball, Zely Lee, Maigen Black and Laurie Ryan-Cooper