

Meeting the Needs of Students with

Traumatic Brain Injury



A RESOURCE MANUAL FOR MINNESOTA EDUCATORS (Revised 2013)

*Minnesota Low Incidence Projects
Serving Learners with Low Incidence Disabilities*

Funding for this program is made possible with a grant from the MN Department of Education. The source of the funds is federal award Special Education Program to States, CFDA 84.027A



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A Resource Manual for Minnesota Educators (Revised 2013)

This publication has been written to assist individuals responsible for educating students with a traumatic brain injury (TBI), and is published by the MN Low Incidence Projects. *Funding for this manual is made possible with a grant from MN Department of Education. The source of the funds is federal award Special Education – Program to States, CFDA 84.027A.* Permission is granted to duplicate this publication for nonprofit educational uses. To download, go to:

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ACKNOWLEDGEMENTS

This resource manual for educators was initially created in 1995; prior to this most recent edition, it was last revised in 2004. The following individuals are recognized for their assistance in revising this manual in 2013:

Kelly Bredeken

School TBI Specialist
Region 11

Mary Smith-Dennis

School TBI Specialist
Region 11

Kary Briner

Pediatric Brain Injury Program Coordinator
Hennepin County Medical Center

Sandra Tufte

School TBI Specialist
Region 11

Monica Capra

School TBI Specialist
Region 10

Deb Williamson

Statewide TBI Specialist
MN Low Incidence Projects

Special thanks to the following individuals for their contributions:

Kim Kang (advisor)

MN State Council on Disability

Barbara Sisco (advisor)

Minnesota Department of Education

Candace Vegter (advisor/contributor)

Gillette Children's Specialty Healthcare

Readers:

Mary Jo Boehning, TBI Specialist/Region 9

D.Mae Ceryes, TBI Specialist/Region 4

Darwin Dyce, TBI Specialist/Regions 6 & 8

Peggy Olson, Parent

Beth Olson, Parent

Sue Zmyslony, TBI Specialist/Region 3

Table of Contents

Part I: Introduction: Understanding Traumatic Brain Injury

TBI as a Disability 2

How We Learn 3

Parts & Functions of the Brain..... 3

Impact Injuries..... 6

Severity of Injury 7

Age at Time of Injury 9

Primary & Secondary Injuries..... 10

Medical Interventions 12

Common Symptoms Following Traumatic Brain Injury (chart) 14

Effects of a Traumatic Brain Injury 15

Understanding (Non-Traumatic) Acquired Brain Injury..... 23

Definition of Terms 24

Key Facts 32

Part 2: An Overview of School Services

History of Special Education Law & TBI Services in Minnesota 35

School Statistics..... 35

Legal Definitions..... 36

Spectrum of School Services for Students with TBI 38

Part 2: An Overview of School Services, *continued*

Overlapping Domains: Section 504 and IDEA40

IDEA/504 Flow Chart42

Special Education Category of TBI43

Role of the TBI Specialist in the Schools43

Service Delivery Model for TBI.....44

Evidence-Based Practice45

Other Key Services & Supports.....46

School Health Services47

Key Facts50

Part 3: Return to School Following a Mild TBI/Concussion

Defining Mild TBI.....52

Causes.....52

Recommendations Following a TBI.....53

School Supports and Services55

Possible Post-TBI Behaviors.....55

Intervention Strategies57

School Checklist: Return to School Following Mild TBI/Concussion64

TBI Medical Documentation Form.....66

Key Facts68

Part 4: School Re-Entry Following Extended Hospitalization

Initial Evaluation70

Progress Monitoring71

TBI School Re-Entry Form72

TBI Medical Documentation Form75

Key Facts77

Part 5: Educational Evaluation

Purpose of an Educational Evaluation79

Referral80

Members of an Evaluation Team81

Utilizing Evaluation Data from Other Agencies82

Neuropsychological Evaluation83

Required Components of a School Evaluation84

Pre-Injury Profile84

Identifying Uneven Cognitive Abilities85

Choosing the Correct Tools.....86

Intellectual and Standardized Achievement Tools.....87

Optimal Testing Conditions88

Modifying Standardized Tests89

Functional Evaluation Tools & Methods90

Informal Evaluation91

Systematic Observations92

Functional Evaluation Tools Specific to TBI94

Part 5: Educational Evaluation, *continued*

Traumatic Brain Injury Checklist.....94

Interpretation of Evaluation Results96

Re-Evaluation.....96

Considerations for Evaluating the Very Young Child.....97

Evaluation Tools for the Very Young Child (Birth to Five)..... 99

Evaluation Tools to Consider for Students K-12..... 101

Key Facts 109

Part 6: Minnesota Administrative Rules: TBI

Definition 112

Criteria 112

Part 7: Eligibility

Considerations for Determining Eligibility 119

TBI Criteria Checklist 120

Acquired Brain Injury 120

Congenital Brain Injury 121

Considerations for TBI Eligibility (Chart) 122

Medical Documentation..... 123

Indicators of Need 125

Comparing TBI to Other Categories..... 130

Key Facts 135

Part 8: Designing an Educational Program

Educational Needs of a Unique Learner 137

Executive Functioning 138

Recovery is an Ongoing Process 139

Program Planning 139

Ongoing Informal Evaluation 140

Individualized Education Plan (IEP) 141

Accommodations & Modifications 143

Statewide Assessment for Students with Disabilities 145

Essential Educational Approaches 146

Teaching New Skills and Concepts (Task Analysis) 146

Instructional Modifications, Accommodations and Supports 150

Compensatory Strategies 156

Environmental Accommodations 160

Key Facts 162

Part 9: Behavioral, Emotional & Social Changes

Behavioral Changes Following a TBI 164

Multiple Factors to Consider 164

Behavioral & Emotional Changes 166

Positive Behavior Strategies & Supports 167

Environmental Accommodations 167

Specialized Behavioral Instruction 168

Examples of Positive Behavior Strategies 170

Part 9: Behavioral, Emotional & Social Changes, *continued*

Antecedent Behavior Consequence (ABC) Model173

Adolescents with TBI: Behaviors and Strategies175

Evaluating the Environment and Behavior176

Teaching Appropriate Behaviors178

Impact of TBI on Self-Esteem and Emotional Maturity179

Impact of TBI on Social Relationships180

Connecting Areas of Deficit with Potential Social Challenges (chart).....182

Social Skills Training183

Key Facts185

Part 10: Brain Injury and the Very Young Child

Brain Development.....188

Mechanism of Injury189

Other Factors189

Non-Accidental or Inflicted Trauma: SBS/AHT190

Impact of Injury.....190

Implications for the Educational Setting191

Acquired Brain Injuries192

Key Facts193

Part 11: Post-Secondary Transition: Considerations for Evaluation & Planning

School Transition Evaluation196

Strategies for Facilitating a Smooth Transition198

Standardized College Admissions Tests & Accommodations199

Community Resources200

College Disability Services200

Supplemental Security Income (SSI)201

Vocational Rehabilitation Services202

Legal Supports: Age of Majority203

Driver’s Evaluation & Training205

Key Facts206

Part 12: Considerations for Working with Families

A Parent’s Viewpoint209

Resources and Information210

Collaboration211

Building Trust212

Siblings214

Key Facts216

Part 13: Frequently Asked Questions (FAQ)

General Information218

Identification & Evaluation219

Service Delivery224

Part 14: Appendices

Appendix A: Information Sheets

TBI Information Sheet227

Executive Functions Information Sheet.....233

MN Department of Education Fact Sheet: Birth to 4 Years239

MN Department of Education Fact Sheet: Ages 5 to 12.....243

MN Department of Education Fact Sheet: Teens.....247

MN Competencies for Educators251

Appendix B: Strategies, Accommodations & Supports

Instructional Strategies, Environmental Supports & Accommodations258

Adolescents: Common Behaviors & Strategies Chart281

Accommodations & Modifications Checklists for Educational Settings.....283

Early Childhood Setting.....284

Elementary Setting.....285

Secondary Setting.....286

Appendix C: Forms & Checklists

TBI Checklist.....288

TBI Observation/Interview Form.....298

MN Department of Education TBI Criteria Checklist301

School Checklist: Return to School Following a Mild TBI/Concussion303

TBI Medical Documentation Form.....305

Appendix C: Forms & Checklists, continued

TBI School Re-Entry Form: Following Extended Hospitalization307

ACE (Acute Concussion Evaluation) Form.....310

CDC Concussion Signs & Symptoms Checklist.....312

Appendix D: Resources

School Resources315

Community Resources..... 316

State Resources 319

Electronic Publications..... 320

Appendix E: References

Part 1

Understanding Traumatic Brain Injury

TBI as a Disability

How We Learn

Parts & Functions of the Brain

Impact Injuries

Severity of Injury

Age at Time of Injury

Primary & Secondary Injuries

Medical Interventions

Common Symptoms Following Traumatic Brain Injury (chart)

Effects of a Traumatic Brain Injury

Understanding (Non-Traumatic) Acquired Brain Injury

Definition of Terms

Key Facts

TBI as a Disability

In the United States, unintentional traumatic brain injury (TBI) is the leading cause of death and disability for children and youth. The most common causes of TBI include motor vehicle accidents, falls, sports, and abuse. The largest group of individuals who sustain a traumatic brain injury fall within the 15 to 24 year old age group, but the frequency is nearly as high for children under 15 years of age.

Among children and youth aged 0 to 14 years in the United States, each year TBI results in an estimated

- ❖ 3,000 deaths
- ❖ 29,000 hospitalizations
- ❖ 474,000 hospital emergency department visits

(Source: Centers for Disease Control and Prevention)

Moderate to severe injuries, and in some cases, mild injuries in children and youth can lead to immediate and/or long term impairments in one or more areas, including cognitive, behavioral, physical, social and emotional development. It is vital for educators to have the skills and knowledge to identify and address the educational needs of these students in the school setting. To this end, this manual is designed to assist school personnel, including general and special education teachers, related service providers, administrators and others who work with these students. While this manual will emphasize unique characteristics associated with TBI, educators should also be aware that many of the tools, strategies, and instructional methods used with other students may also be appropriate for students with TBI.

How We Learn

The brain is one of the largest and most complex organs in the human body; it controls our actions, thoughts, and emotions. It is made up of more than 100 billion microscopic neurons held in place by a jelly-like substance, and is encased in a rough, bony rigid skull. These neurons communicate through trillions of connections called synapses. Chemicals in the form of neurotransmitters allow neurons to rapidly and efficiently send, receive, and store information. At birth, the brain contains all the neurons it will ever have, many of which will not be retained as the brain ages and reaches adult maturity.

Experience, particularly throughout childhood, sculpts the brain. Immature neurons are often likened to a sapling; with time and stimulation, these brain cells will later develop into lush, mature 'trees', connected to each other through a complex network of roots and branches. As the brain works, these neuron cells will develop synapses and dendrites, enabling the cells to handle more and more information. This process embodies what we call 'learning', and includes the ability to interpret and recall information, problem solve, analyze, create, and communicate throughout a person's lifetime.

Additionally, during the early childhood years, the brain is continually transformed through the loss of less-used neuronal connections, and alternately, the strengthening of synaptic connections that have been used the most. This process, known as pruning, is both constant and immediate, with synaptic connections constantly undergoing change throughout the early and mid-childhood years.

Parts & Functions of the Brain

The nervous system is the body's decision-making and communication center. The central nervous system (CNS) includes the brain and the spinal cord, and the peripheral nervous system (PNS) consists of nerves. As these interconnected systems work together, they control every aspect of

daily life. Sensory nerves gather information from the environment and send this information to the spinal cord, which then speeds the message to the brain. The brain then makes sense of that message and fires off a response. Motor neurons deliver the instructions from the brain to the rest of the body. The spinal cord, a bundle of nerves running up and down the spine, is analogous to a superhighway, speeding messages to and from the brain every second of every day and night.

The brain consists of three main parts: the forebrain, midbrain, and hindbrain. The forebrain consists of the cerebrum (also known as the cerebral cortex), thalamus, and hypothalamus (part of the limbic system). The midbrain consists of the tectum and tegmentum. The hindbrain is made of the cerebellum, pons and medulla. Often the midbrain, pons, and medulla are referred to together as the brainstem. Refer to the diagram on page 5 entitled, *Functions of the Brain*.

The Cerebrum or Cerebral Cortex

The cerebrum or cerebral cortex is the largest part of the human brain, associated with higher brain function such as thought and action. The *cortex* is the outermost layer of brain cells. Thinking and voluntary movements begin in the cortex. The cortex appears wrinkled, which indicates a high degree of cortical folding. Essentially this makes the brain more efficient, because it can increase the surface area of the brain and the amount of neurons within it.

The cerebral cortex is divided into four sections, called *lobes*: the frontal lobe, parietal lobe, occipital lobe, and temporal lobe. While these different areas of the brain are often responsible for uniquely different functions, there is also some overlap. The diagram on the next page offers a brief overview of some of the main structural areas of the brain and their correlating functions as they relate to cognition and executive function skills, sensory abilities, movement, and basic vital life functions.

Functions of the Brain

Frontal Lobes

This important area houses the *executive functions* of the brain and controls thinking, emotions, planning, judgment, smell, reasoning, initiation, organization, problem solving, short term memory and movement. An area that controls language comprehension called Broca's area is contained within the left frontal lobe.

Temporal Lobes

The right side is responsible for perceptual skills such as spatial relationships and visual organization. The left side controls expressive language and is called Wernicke's area. Although memory is a function of many parts of the brain, the temporal lobes play a significant role in this function.

Parietal Lobes

Lobes direct opposite-side motor function, including strength and coordination. They also interpret sensory information such as taste, temperature and touch.

Occipital Lobes

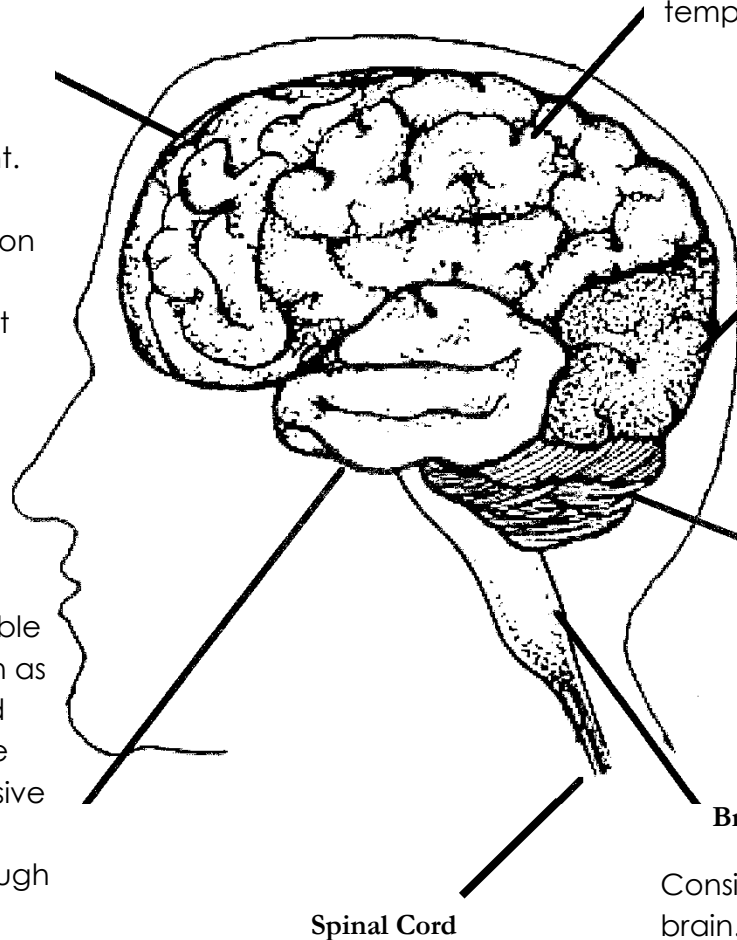
This is the primary visual area; the brain receives visual information from the eyes and interprets it in a meaningful context.

Cerebellum

Chiefly involved with muscle function and maintaining balance, resulting in smooth directed movements.

Brainstem

Considered the stalk of the brain. All nerve fibers pass through here, including the cranial nerves. The brainstem performs sensory, motor, and reflex functions. Of primary importance are the vital nerve centers that control heart action, blood vessel diameter, and respiration.



Impact Injuries

Despite the fact that the brain is cushioned by cerebral-spinal fluid and encased within the skull, it can easily be damaged by shaking, falls, blows or other violent events. When an injury occurs, many neuron cells are irreversibly destroyed; others remain alive but exist in a vulnerable state, sometimes for days or even months after the injury.

Damage to the brain from an impact injury can be two-fold: it can result in localized injury to a specific area of the brain, but can also cause diffuse injury throughout the brain. This can occur as a result of damage to blood vessels that supply oxygen to the brain and regulate blood flow; and a disruption in neurochemicals, which can result in swelling and increased pressure inside the skull.

The organization of the brain is complex, but it is known that certain areas regulate specific functions. Since areas of the brain are interconnected, damage to any part of the system can often result in cognitive, motor, sensory, emotional, and behavioral changes. When an injury occurs to a specific part of the brain, specific deficits can often be predicted, but the existence of other potential deficit areas should also be taken into consideration.

Damage to the frontal lobe is significant in that it often results in problems with behavior regulation and executive functions, such as organization, initiation, focused attention, inhibition, etc.

When a child suffers damage to the frontal lobe, all of the deficits may not be seen until the child is at an age where they are expected to have developed more of these executive function skills—typically during the adolescent and teen years.

Severity of Injury

Medical professionals typically classify the initial severity of a Traumatic Brain Injury as mild, moderate, or severe. They do this using an assessment tool called the Glasgow Coma Scale (GCS). It should be noted, however, that there is not necessarily a correlation between the initial rating of severity and the individual's eventual outcome. For example, an individual with a severe injury can recover quite well and someone with a mild injury can suffer from chronic debilitating symptoms.

The following terms define these categories of initial injury severity, though institutions vary on how they define TBI, and the definition is evolving as more research is done.

Mild TBI (may also be defined as a concussion)

- ❖ A Glasgow Coma Score between 13 and 15 on a scale from 3 to 15
- ❖ Any alteration in mental state at the time of the accident, e.g., feeling dazed, disoriented or confused
- ❖ Any loss of memory for events immediately before or after the accident; memory loss after the event (called post-traumatic amnesia or PTA), lasting less than 24 hours
- ❖ No loss of consciousness, or a loss of consciousness lasting less than 30 minutes
- ❖ No focal deficit on clinical examination

Approximately 75 to 80 percent of all TBIs are mild. While most resolve without significant complications within 7 to 10 days, some students with mild TBI struggle with somatic symptoms and cognitive changes for weeks and possibly months and years.

Contrary to previous belief, an individual does not have to have a loss of consciousness to sustain a brain injury, and in fact only 10% of people with mild TBI lose consciousness. In addition, it is uncommon for someone who has suffered a mild TBI to have any findings on a head CT scan.

Moderate TBI

- ❖ A Glasgow Coma Score between 9 and 12 on a scale from 3 to 15
- ❖ A loss of consciousness that lasts for more than 30 minutes, but less than 24 hours
- ❖ Post-traumatic amnesia that lasts between 24 hours and 7 days

Treatment for a moderate TBI is largely based on symptoms; if symptoms are mild, the individual is treated more like someone with a mild injury; if symptoms are more severe, they tend to be treated as a severe injury. Age, overall injury severity score and head CT scan findings will also guide treatment.

Severe TBI

- ❖ A Glasgow Coma Score of 8 or less
- ❖ A loss of consciousness that lasts for more than 24 hours
- ❖ Post-traumatic amnesia lasting for 7 days or longer

Severe TBI represents only 10-12% of all TBI. People with severe TBI are initially in a coma. Approximately 80% of individuals who experience a severe TBI will suffer multiple chronic disabilities which often last a lifetime. About 30% will go on to develop epilepsy.

Age at Time of Injury

Although young children may physically recover more quickly from serious injury than adults, the long term implications resulting from a TBI are often more profound. The brain of a child continues to develop throughout the early years and adolescence. Injury to a developing brain can disrupt that learning process; the younger the child, the more profound the long term effects, particularly in the areas of behavioral self-regulation and learning. When a brain injury occurs, information previously learned is often retained, but new learning can be significantly impacted. Younger children, particularly of preschool age, do not have the same knowledge base to build upon and may experience greater difficulty mastering new skills.

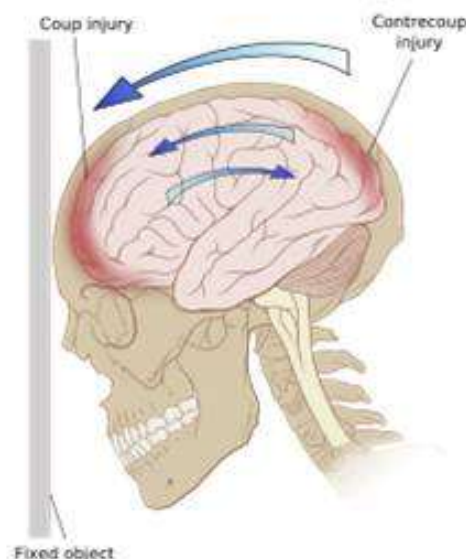
Because injuries in children and adolescents occur in brains that are in the process of developing, the cognitive, social, and behavioral effects are often not seen until later in life when those developmental skills are expected to emerge or are required. For example, higher order executive function skills (judgment, problem solving, reasoning, organization) often don't emerge until later adolescence; youth who experienced a TBI at a younger age may not demonstrate these traits at the same time as their peers, or to the same degree. Monitoring such children and youth over time for these delayed consequences is critical in terms of pro-active planning and appropriate accommodations.

Primary Injury

When an injury occurs from a fall, vehicle crash or other similar accident, the brain can be damaged in a number of ways. Primary injury occurs at the time of the trauma and is caused by the direct impact of the brain against the skull. Focal or localized injury is confined to a specific part of the brain, and a result of direct external impact. Resulting damage to brain tissue is irreversible, as brain tissue does not regenerate.

Coup Contrecoup Injury

Coup contrecoup is one type of focal injury, and occurs when the brain is forcibly rocked forward and backward and comes into contact with the rough inner surface of the skull. Injury resulting from the initial movement is called Coup (acceleration) and occurs at the site of impact with an object. Contrecoup (deceleration) occurs when the opposite area is impacted as the brain whiplashes back against the skull. This often results in more serious damage to the frontal and temporal lobes of the brain.



(Image courtesy of Patrick J. Lynch, medical illustrator; C. Carl Jaffe, MD, cardiologist; Creative Commons Attribution 2.5 License 2006)

Diffuse Injury

In addition to the injury that occurs at the site of impact, movement of the brain inside the skull can also result in stretching, laceration and rotational shearing of neurons. This often results in diffuse or widespread injury to the brain. One common diffuse injury is called Diffuse Axonal Injury (DAI), which is defined as an injury to the axon (an extension of the neuron) which carries information from the neuron to the central nervous system. As the axon is twisted, it not only damages the axon, but results in the death of the associated neuron. Diffuse damage to the brain can result from such an injury, even when there is no loss of consciousness.

Secondary Injury

Additional damage to neurons may occur after the initial injury event. When neurons are damaged or destroyed, brain tissue reacts with a series of biochemical reactions. This process causes further damage to the brain and results in what is called secondary injury. Examples of secondary injury include edema (swelling of the brain), changes in blood flow to brain tissue, and increased intracranial pressure.

Swelling and Pressure Injury

The space inside the skull consists of brain tissue, blood, and fluid called cerebrospinal fluid (CSF). Because the skull is an enclosed space, an increase in the mass or volume of any of these three components can cause increased pressure. Following a TBI, the neurons may attempt to absorb additional fluid, which can result in the swelling of brain tissue, and consequently, increased pressure inside the skull. Excessive intracranial pressure (ICP) can cause damage to delicate brain tissue, leading to additional brain injury and lasting disability. Extremely high pressure can lead to death.

Bleeding in the Brain

During a traumatic event, the veins or arteries that supply the brain can become damaged or broken and bleed inside the brain; this is also known as intracranial bleeding or hemorrhage. Blood is very irritating to brain tissue and can cause seizures and/or additional tissue damage. This extra blood may also exert additional pressure inside the skull, possibly exacerbating the existing injury. There are different terms for different types of bleeds, depending upon the location of the bleed in relation to the brain and the skull.

Medical Interventions

Controlling Pressure

Following a significant brain injury, physicians will closely monitor a patient for any signs that intracranial pressure is increasing. If the pressure is too high, interventions will be used to decrease it to an acceptable level. Physicians may first try non-surgical methods for controlling brain swelling, or *edema*, and resulting excessive intracranial pressure. Draining cerebrospinal fluid (CSF) using specific drugs, medically inducing a coma or hypothermia treatments are all considered non-surgical options.

Physicians may suspect problems with intracranial pressure buildup based on the patients' age, description of the injury and the onset of symptoms. An examination will include evaluating the pupils of the eyes, CT scans, and the patient's Glasgow Coma Score. If findings indicate potential pressure on the brain, a burr hole is drilled in the skull for placing a monitor or catheter to monitor the pressure.

Surgical Intervention

If non-surgical measures are not effective in reducing intracranial pressure, neurosurgical intervention may be needed. To surgically alleviate brain swelling, the neurosurgeon may perform a *craniectomy*. In this procedure, the surgeon removes a section of the skull (bone flap), allowing the swelling brain room to expand. If the amount of removed bone is large, the procedure is called a *hemicraniectomy*. If the surgeon attempts to save the bone to be surgically re-implanted later, the first operation is called a *craniotomy*, and the procedure to replace the bone is a *cranioplasty*. To save the bone for later use, it may be frozen or implanted under the skin of the abdomen until needed at a later date. If some of the brain tissue is obviously damaged and recovery in the injured area is unlikely, the surgeon may remove damaged brain tissue to create additional space in the skull. This is a *partial lobectomy*.

Repairing Blood Vessels and Removing Blood Clots or Foreign Matter

Bleeding inside the skull can also cause an increase in intracranial pressure and can be identified using CT scans. If the injury is an open head wound, bits of bone or foreign matter may need to be removed from the brain tissue, and the membrane covering the brain repaired. To correct these problems, the neurosurgeon may perform a craniotomy to gain access to the injured brain area. He can then remove foreign materials or clots, evacuate blood, repair blood vessels, and suture the dura (outermost layer of the meninges surrounding the brain) as needed. When the bone is replaced after the surgery, temporary metal plates may be installed to hold the bone flap in place while the bone knits. The metal plates are removed after the bone heals.

Common Symptoms Following Traumatic Brain Injury

Each brain injury is unique, and may result in changes in physical ability, learning, behavior and personality. Frequently reported symptoms may include any of the following:

Physical	Cognitive	Behavioral/Mood
<ul style="list-style-type: none"> ❖ Headaches ❖ Sleep changes: too much, too little, poor quality ❖ Fatigue ❖ Lethargy ❖ Dizziness ❖ Problems with balance ❖ Nausea/vomiting ❖ Sensitivity to light and/or sound ❖ Blurred or double vision ❖ Other visual changes ❖ Changes in hearing ❖ Tinnitus (ringing in the ears) ❖ Change in speech production ❖ Difficulty swallowing/ inability to feed orally ❖ Seizure disorder ❖ Motor skill deficits ❖ Sensory impairment(s) ❖ Physical impairment(s) 	<ul style="list-style-type: none"> ❖ Confusion ❖ Attention problems ❖ Difficulty concentrating ❖ Changes in memory: immediate, delayed, prospective, new learning ❖ Slowed processing speed ❖ Difficulty with organization ❖ Impaired judgment/impulse control ❖ Difficulty problem solving ❖ Trouble sequencing ❖ Hard time transitioning between tasks ❖ Trouble multi-tasking ❖ Trouble planning ❖ Difficulty with orientation ❖ Impaired organization ❖ Decrease in academic skills ❖ Change in expressive and/or receptive language ❖ Poor insight 	<ul style="list-style-type: none"> ❖ Irritability ❖ Agitation ❖ Frustration ❖ Depression ❖ Anxiety ❖ Social isolation ❖ Lack of motivation ❖ Difficulty with initiation ❖ Mood swings ❖ Saying/doing inappropriate things ❖ Developmental regression ❖ Self-centered behavior ❖ Impulsivity ❖ Feelings of grief & loss ❖ Low self-esteem ❖ Restlessness ❖ Emotional lability ❖ Vulnerability ❖ Difficulty with peer relationships

Effects of a Traumatic Brain Injury

There is a wide range of physical, cognitive, and behavioral effects that can result from a TBI. The injuries often cause diffuse damage to brain tissue, and many interrelated brain functions can be affected. Although there are often common areas of identified symptoms or impaired skills, the outcomes are very diverse with each child, often revealing a unique pattern of strengths and challenges. This is the result of the nature of the injury, but can also be influenced by such factors as pre-existing abilities, personality traits, home environment, etc.

This section presents an overview of possible effects following a TBI, but is not intended to provide a narrow or prescriptive profile. It is unlikely that any one student would present with all of the following effects. However, an understanding of potential symptoms and impairments will assist the educator in determining the student's needs, related accommodations and strategies, and services to facilitate the child's success in school.

Initial Effects

In the first few days following trauma, the student may experience a variety of medical and physical complications, including swelling of the brain, edema (excess cerebral-spinal fluid), respiratory difficulty, and seizures. Motor problems are often experienced during this period of time, and can include rigidity, spasticity, coordination difficulties, and tremors. As the child emerges from coma, he/she may experience temporary neurologically based irritability, agitation, and aggression; or may lack any emotional expression. As the child improves, he/she may be able to follow simple routines and directions, and may recall selected past events, but appear confused or have no memory of recent or current events.

These early immediate symptoms usually diminish rapidly. This early, relatively rapid improvement is often interpreted as an indication that subsequent recovery will also be rapid and complete.

However, children with severe, moderate, and sometimes even mild TBI may have persistent cognitive, behavioral, and sensorimotor difficulties.

Physical Effects

Many of the physical symptoms listed on the preceding chart can be noted immediately following the injury, but can also be persistent and occur for days, weeks, months, or longer. Fatigue is a common complaint, and can be physical and/or neurological. Either type can impact a student's ability to concentrate and persist at tasks, although neurological fatigue is not as easily treated. Increased fatigue caused by demands on cognitive functioning can have a deleterious effect on overall abilities. In such cases, avoidance of any cognitively or physically demanding activity is recommended, with activity levels slowly re-introduced as symptoms resolve.

A lack of energy or endurance is also very frequently reported, as are headaches, sleep difficulties, dizziness, or sensitivity to light or sound. A small percentage of children may also experience seizures immediately after the injury, or months and even years later. In most cases, seizures can be controlled through anticonvulsant medication, although this may present additional side effects that can impact learning and attention.

Occasionally, students with TBI have difficulty maintaining a consistent body temperature, which can pose challenges when presented with rapidly changing environmental conditions. In such cases, this should be monitored closely.

Motor skills often recover to a point where normal independent functioning occurs following a TBI. In some cases, however, motor recovery can plateau, resulting in some long-term motor problems. Difficulties with balance, gait, strength, range of motion, and coordination may continue, which can impact general mobility and self-care activities.

Sensory Effects

Brain injury can cause complex visual disabilities such as double vision and impaired coordination of both eyes. In some cases, the part of the brain that controls visual processing has been damaged, resulting in visual field cuts or partial vision loss. However, because of the brain's attempt to compensate, the individual may report no visual problems. As a result, these students can experience significant problems with near-point reading (from a book or computer screen) or far-point (board, projected screen, charts, etc.). Young children in particular are not adept at reporting visual field losses. A vision screening is an important part of any early evaluation if visual acuity and/or visual field loss is suspected.

Hearing loss can also occur as a result of a TBI and related damage to the external, middle or inner ear; the auditory nerve; or the auditory center of the brain, resulting in conductive, sensori-neural, and/or cortical hearing impairments. With this latter loss, a student may think he/she is hearing correctly, which can delay a proper diagnosis. Careful monitoring and evaluation should be considered whenever a hearing loss is suspected.

Cognitive Effects

Long-term cognitive effects are typically experienced by children and youth with TBI, and can affect memory, attention, concentration, and executive functions.

Memory

Memory deficits are among the more common and lasting effects following brain injury. Children may have difficulty with encoding, storing, and retrieving new information. This is particularly true when the information is presented quickly, in large 'chunks', or in detail. These difficulties can affect

the student's ability to learn new information or subtle social and behavioral skills. Because prior memories may be preserved, teachers and family members may not initially detect problems.

Attention & Concentration

An inability to attend to a task and maintain focus for adequate periods of time is often noted following a TBI. Educators may notice that the student is having difficulty following directions, visually attending to a speaker or an assignment, and completing work in a timely fashion. The student may appear to be easily distracted by noise or movement, and tend to 'overload' quickly. Attention problems can also affect the student's ability to shift from one topic or activity to another.

Executive Functions

Impaired executive functions are most commonly associated with damage to the frontal lobes of the brain, an area that is often compromised in traumatic brain injuries. Because of the significant role that executive functions have in learning and daily functioning, careful evaluation and monitoring of the student should occur in this area whenever there is a traumatic brain injury.

Executive function deficits may include difficulty with any of the following:

- ❖ Setting realistic goals
- ❖ Planning activities and initiating tasks
- ❖ Organizing materials, projects, or schedule
- ❖ Inhibiting inappropriate statements, emotions or behaviors
- ❖ Monitoring and evaluating own performance
- ❖ Problem solving

Executive function impairments also include difficulties in transferring and generalizing newly acquired skills to different settings or situations. Teaching this skill will require a great deal of planning and practice.

(For more information on this topic, refer to the Executive Function information sheet found in the Appendices.)

Speech & Language Effects

Speech problems are often apparent immediately following a TBI, such as limited or slowed speech. Often, these difficulties show improvement during the early stages of recovery. However, some speech problems may persist, such as slowed speech, speaking in a monotone, or imprecise articulation. However, research indicates that most children with brain injuries recover motor speech functions.

However, while speech patterns and existing vocabulary size often recover to pre-injury levels, problems with new learning may have a pronounced effect on future vocabulary acquisition. In addition, students with a history of TBI may also have ongoing higher-level language and communication problems, which can impact academic and social success.

Expressive Language

Following a TBI, verbal expression is often challenging with regard to:

- ❖ Confrontation naming (naming things or people upon presentation)
- ❖ Word retrieval (coming up with names for things or people spontaneously)
- ❖ Extended or detailed responses

Receptive Language

Comprehending or understanding spoken language often deteriorates sharply with increases in:

- ❖ The rate of speech
- ❖ The amount of information to be processed
- ❖ The degree of abstractness
- ❖ Interference from the environment (such as a busy or noisy classroom, hallway, cafeteria, gym, etc.)

Social Communication

The ability to participate appropriately in conversation requires the use of cognitive, linguistic, and social skills, many of which are affected following a TBI. As a rule, disorganized or socially inappropriate conversation is common in students with TBI.

Some of the skills needed by older students for appropriate social communication include:

- ❖ Sustained attention to shifting topics
- ❖ Accurate perception and interpretation of social cues
- ❖ Retention and integration of information shared earlier
- ❖ Organization of ideas
- ❖ Retrieval of words
- ❖ Recollection and application of social 'rules'

Students with TBI may score adequately on commonly used standardized tests of language. However, because of the functional nature of speech and language impairments, and the effects such difficulties have on social and academic success in school, an evaluation must combine formal speech and language evaluations with structured observations of the student's communication skills in a variety of daily activities and environments.

Behavioral Effects

TBI often has a pronounced effect on a student's behavior. Many times, the changes reflect an exacerbation of challenging behaviors the child had prior to the injury. There are other behaviors that may occur as a direct result of the injury and are new responses for the child.

In general, behavior changes in children and youth with TBI can result from:

- ❖ Neurological damage to the brain
- ❖ Cognitive and/or communicative difficulties
- ❖ Feelings of failure and frustration that can lead to acting out or withdrawal
- ❖ Situations that are overly demanding, confusing, or stimulating
- ❖ Pre-injury behaviors that have become exacerbated

In some children and youth, cognitive effects after a TBI can be misinterpreted as behavior difficulties. Problems in initiating activities can be incorrectly perceived as obstinate behavior, lack of motivation, or laziness. An inability to filter out distractions and focus on the activity at hand may be perceived as not following directions or non-compliance. Students with preserved skills in some areas and gaps or delays in other areas may be characterized as 'manipulative' due to their variable performance. Impulsivity, dis-inhibition, poor self-monitoring and attention to social cues may result in behavior not seen prior to the injury, and impact family and peer relationships.

Behavioral difficulties that can result from a TBI include:

- ❖ Agitation and irritability
- ❖ Mood swings
- ❖ Depression
- ❖ Hyperactivity
- ❖ Apathy and lack of motivation
- ❖ Anxiety
- ❖ Frustration
- ❖ Social isolation
- ❖ Impulsivity
- ❖ Low self-esteem

Some children and youth react to their post-injury state by denying that there is any change from before the injury. They may deny or minimize physical or cognitive limitations, which may be deemed inappropriate by others. In some cases, this denial reflects a cognitive inability to judge their own performance or realistically evaluate their capabilities. In such cases, the student may benefit from counseling to address these issues.

Psychosocial problems in children and youth with TBI can be very complex. The variables are many, and can include injury-related behaviors, social difficulties stemming from cognitive deficits, and possible social isolation. Family issues can be present, and reflective of increased stress, financial concerns, etc. Considerations for behavioral, emotional and social challenges are discussed in more detail in Part 9.

Delayed Effects

Children often retain some skills and information acquired prior to the injury. Preserved abilities such as general information and vocabulary may be misleading to educators, and give the impression of higher level cognitive abilities while major learning difficulties exist.

Traumatic brain injuries in children can have delayed effects on cognitive functions. Some difficulties become apparent only as the child continues through developmental stages and faces new and different educational demands. Therefore, effects of the brain injury occurring before the cognitive functions fully develop may not become apparent until a later age. For example, abilities in planning and problem solving are usually quite undeveloped in early childhood. Cognitive difficulties in these areas may not become apparent until the student is older.

Understanding (Non-Traumatic) Acquired Brain Injury (ABI)

Some medical conditions may result in an injury to the brain, but would be classified as non-traumatic in nature and defined as a non-traumatic or *acquired brain injury* (ABI). As a result, such conditions would **not** meet criteria for the TBI category, as defined by Minnesota State Rule (with the exception of surgical resection of a brain tumor). However, it is important for a school team to note that the student may still present with symptoms and educational needs that are typically seen in someone with TBI, and may require accommodations and supports in the school setting.

Some examples of medical conditions that would be considered non-traumatic or identified as an ABI include stroke, encephalitis, meningitis, aneurysm, anoxia, or brain tumor. These conditions may result in structural and biochemical changes to the brain, which can affect cognitive function and school performance. A tumor, for example, may cause injury to the brain at the site of the growth. Medical treatment for brain tumors may also cause focal or diffuse damage to brain cells,

depending upon the intervention. For example, research has documented side effects from radiation and chemotherapy that could impact later learning.

Another treatment for brain tumors is surgical resection, which presents unique considerations when determining whether a brain injury is traumatic or acquired/non-traumatic. As with other forms of treatment for brain tumors, surgical resection may inadvertently cause damage to surrounding brain tissue. However, an important distinction is that surgical resection may be viewed as 'external force', and thus be considered as an acceptable medical diagnosis of a TBI.

Individuals with infections or inflammation of the central nervous system caused by viruses or bacteria (e.g., meningitis or encephalitis) may have long-term residual neurological effects as well.

As a result of possible secondary learning and health impairments, it is recommended that school staff closely monitor the ongoing educational progress of students with these conditions, and provide the necessary accommodations and supports for academic success- whether it be informal monitoring, a 504 plan, or qualification under a special education category that would best reflect the student's educational needs. For more information about determining eligibility, see Part 7.

Definition of Terms

All definitions, unless otherwise stated, were taken from one or more of the following website sources:

- ❖ Brain Injury Association of America www.biausa.org
- ❖ Mayo Clinic- Foundation for Medical Education & Research
<http://www.mayoclinic.com>
- ❖ U.S. National Library of Medicine/National Institutes of Health
<http://vsearch.nlm.nih.gov/>

Acquired Brain Injury (ABI)

Acquired Brain Injury is a broad term defined as brain injuries that are non-traumatic in nature, are not hereditary, congenital, degenerative, or induced by birth trauma; and have occurred after birth. Because the cause of the brain injury is non-traumatic in nature, i.e., not caused by external impact or force, *this condition would **not** meet MN special education criteria for the category of TBI.* Causes of ABI may include anoxic injuries caused by accidents, such as choking; near drowning; infections such as meningitis and encephalitis; strokes; tumors; metabolic disorders such as insulin shock and liver or kidney disease; and toxicity from chemical agents.

Cerebral Contusion/Hematoma

Contusion generally refers to any type of bruise, which occurs when a blood vessel under the skin breaks and leaks blood below the skin surface. A brain or cerebral contusion occurs inside the skull, and may also be referred to as a hematoma. Some brain contusions can be minor and will heal on their own with careful monitoring but no invasive treatment. A severe contusion can be life threatening as blood leaking into the skull cavity exerts pressure on the brain. Increased pressure within the skull can cause additional brain damage and in these cases neurosurgical intervention may be required.

Closed Head Injury

An injury in which there is no open wound to the head, with damage caused by a blunt blow to the head or an acceleration/deceleration of the brain within the skull. The injury results in more diffuse damage with variable and unpredictable consequences. The most common causes include motor vehicle and bicycle accidents, falls, sports, and abuse. A concussion is one example of a closed head injury.

Coma

A coma is a state of prolonged unconsciousness. A coma can have many causes, including TBI. When someone is in a coma, they are unable to respond and have no voluntary movement. If someone is in a coma indefinitely this is called a persistent vegetative state.

Concussion See Mild TBI.

Cranial Tomography (Head CT)

An X-ray that provides a picture of the brain, the CT can show fractures, bruises, clots, and swelling. This is the most common type of imaging following a TBI as it easily accessible in most medical facilities, is quick to perform, is low cost, and carries little risks. The CT is often done to ensure there is no bleeding or other injury to the brain that requires immediate intervention. The CT however does not show injury such as concussion or shear injury, therefore a normal Head CT does not mean that there was no brain injury.

Diffuse Tensor Imaging

A form of MRI used for diagnosing cerebral ischemia, or swelling, or other abnormalities of the white matter. This type of imaging also allows the ability to visualize anatomical connections between different parts of the brain. This type of imaging is not widely available.

Head CT See Cranial Tomography

Head Injury

Head injury is defined as damage to any part of the head, and is a broad term that encompasses injury from internal events such as stroke or external forces such as a blow to the head. It can include injuries to the face, scalp, skull or brain.

Hematoma (Subdural)

A subdural hematoma is a collection of blood on the surface of the brain. A subdural hematoma occurs when small veins between the brain and its outer covering stretch and tear. Although this condition often results from a TBI, some subdural hematomas have unknown etiology.

Hematoma (Epidural)

An epidural hematoma is a hemorrhage between the inside of the skull and the outer covering of the brain. An epidural hematoma occurs when a blood vessel, usually an artery, ruptures; and is often associated with a skull fracture. This type of brain bleed is more common among young people because the membrane covering the brain is not as firmly attached to the skull as it is in older people.

Hematoma (Intraparenchymal)

An intraparenchymal hematoma, also known as an intracerebral hematoma, occurs when blood pools anywhere in the brain.

Hemorrhage

A brain hemorrhage describes broken blood vessels in the brain and may also be called a cerebral, intra-cerebral or intra-axial hemorrhage. A brain hemorrhage is often serious because blood collecting inside the skull's confined space creates pressure on delicate brain tissue, potentially causing irreparable brain damage. In cases of brain hemorrhage, doctors will monitor the intracranial pressure and perform surgery to drain the fluid buildup if necessary.

Hemorrhage (Subarachnoid): A subarachnoid hemorrhage is bleeding in the area between the brain and the thin tissue that covers the brain.

Mild TBI or Concussion

A concussion is a mild TBI. Effects are usually temporary, and can result in headaches, dizziness, nausea, vomiting, lethargy, and irritability. A concussion can also result in problems with concentration, memory, judgment, balance, and coordination. Although concussions usually are caused by a blow to the head, they can also occur when the head and upper body are violently shaken or as a result of whiplash. These injuries can cause a loss of consciousness, but most concussions do not. Because of this, it is not uncommon for someone to be unaware that they have suffered a concussion. Symptoms resolve in days or weeks for most individuals experiencing a first concussion, but some individuals report chronic symptoms lasting months or longer. Multiple concussions can result in debilitating chronic cognitive, sensory and/or health impairments.

Magnetic Resonance Imaging (MRI)

Magnetic resonance imaging (MRI) is a medical imaging technique used to visualize internal structures of the body in detail. MRI provides good contrast between the different soft tissues of the body, which makes it especially useful in imaging the brain. The MRI is more sensitive than a Head CT, but takes longer and is more expensive. MRIs are not normally done in the acute care phase of treating brain injury.

MRI (Functional)

MRI is a relatively new procedure that uses MR imaging to measure the tiny metabolic changes that take place in an active part of the brain. This type of MRI can be useful for assessing the effects of a brain injury. However, it is not as widely available.

Penetrating or Open Head Injury

Defined as an injury in which the brain tissue is penetrated from the outside, as with an obvious wound to the head, such as a gunshot wound or a crushing of the skull. The injury tends to result in localized damage and somewhat predictable impairments based on locale and degree of damage.

Positron Emission Tomography – Computed Tomography (PET/CT) Scan

A PET scan is a form of nuclear medicine imaging which uses small amounts of radioactive material to diagnose and treat. A PET scan measures blood flow, oxygen use, and glucose metabolism to help professionals evaluate how the brain is functioning.

Post-Concussion Syndrome

Post-concussion syndrome is a complex disorder in which a large number of symptoms and signs are present for weeks and sometimes months after an injury that caused a concussion. The most common complaints are headaches, dizziness, fatigue, irritability, anxiety, insomnia, loss of consciousness and memory, and noise sensitivity. Resolution of symptoms usually occurs 3-6 months after the injury, but can take longer. Post-concussion syndrome is an acceptable medical diagnosis for consideration of TBI as a qualifying category.

Shaken Baby Syndrome/Abusive Head Trauma (SBS/AHT)

Abusive Head Trauma (AHT) is an inflicted injury to a child's brain, typically occurring in children birth to 3 years of age and is the result of child abuse. This term is also used interchangeably with the terms Shaken Baby Syndrome (SBS), Shaken Infant Syndrome (SIS), Shaken Impact Syndrome (SIS), and Inflicted Traumatic Brain Injury (iTBI). Any of these terms are considered acceptable medical diagnoses for consideration of TBI as a qualifying category.

Skull Fracture

There are numerous types of skull fractures, which are defined by the impact and type of injury. The most common type is the *linear skull fracture*, comprising 2/3 of all cases. In a linear fracture, the skull bone is cracked, but the skull is not opened. The fracture itself is not dangerous and can potentially heal without special treatment. The danger, however, is that a blow severe enough to crack the skull may also cause a concussion or brain contusion. Other types include *diastatic* (skull separates at suture); *comminuted* (severe blow shatters skull into small pieces); *depressed* (skull fragments are pushed inward); and *basilar* (occurs at base of skull). A skull fracture is an acceptable medical diagnosis for consideration of TBI as a qualifying category.

Single Photon Emission Computerized Tomography (SPECT) Scan

A SPECT scan is a type of nuclear imaging test that allows the physician to analyze the function of internal organs such as the brain, by using a radioactive substance and a special camera to create 3-D pictures. A SPECT scan of the brain can show which areas are more or less active, possibly identifying areas affected by a TBI. This type of imaging is also not widely available.

Traumatic Brain Injury (TBI)

An acquired injury to the brain caused by an external physical force, resulting in total or partial functional disability or psychosocial impairment, or both, that may adversely affect a child's educational performance and result in the need for special education and related services. The term does not apply to brain injuries that are congenital or degenerative, or brain injuries induced by birth trauma. (MN Rule 3525.1348) From: Minnesota Administrative Rules/Office of the Revisor of Statutes; MN Rule 3525.1348 <https://www.revisor.mn.gov/rules/?id=3525.1337>

KEY FACTS: Part I

- ❖ TBI is often considered a hidden disability for a number of reasons. You cannot see the brain, and there can be significant injury with no outward or obvious physical signs. Individuals with TBI often experience subtle, yet profound deficits for unknown periods of time.
- ❖ When there is physical trauma to the brain, the damage is almost always diffuse, yet can also be localized, which can impact learning in complex ways.
- ❖ The severity of the injury does not necessarily correlate with the length of recovery or outcome.
- ❖ The frontal and temporal lobe areas of the brain are particularly vulnerable to injury.
- ❖ The child's age at the time of injury influences the outcome. The younger the child, the more profound the effects may be.
- ❖ Effects from a TBI may not be immediately apparent until later, when developmental milestones are not met or behavioral concerns emerge. Anticipate and prepare for possible later learning and/or behavioral problems.
- ❖ The rate of recovery can be inconsistent and unpredictable.

- ❖ Each child with a traumatic brain injury presents a unique learning and behavioral profile.
- ❖ Although an acquired brain injury (ABI) may result in a learner profile that is similar to a student with a TBI in terms of educational needs, the 'non-traumatic' nature of an ABI prevents qualification under the TBI category in Minnesota.

Part 2

An Overview of School Services

History of Special Education Law & TBI Services in Minnesota

School Statistics

Legal Definitions

Spectrum of School Services for Students with TBI

Overlapping Domains: Section 504 And IDEA

IDEA/504 Flow Chart

Special Education Category of TBI

Role of the TBI Specialist in the Schools

Service Delivery Model for TBI

Evidence-Based Practice

Other Key Services & Supports

School Health Services

Key Facts

History of Special Education Law & TBI Services in Minnesota

In **1984** a small group of families and providers came together to advocate for persons with brain injury. The group established a task force to study the needs of the persons and their families.

In **1985** the task force reported to the Commission of the Department of Human Services (DHS). As a result of that report, DHS created a program within the DHS Long Term Care Division to oversee the coordination of services to persons with brain injury.

In **1990** Public Law 101-476, the Individuals with Disabilities Education Act (IDEA) was passed. Along with renaming the Education of the Handicapped Act Amendments, this law added traumatic brain injury to the list of categories for special education and related services.

In **1993** the Minnesota Department of Education (MDE) established a workgroup of educators, parents and experts to define traumatic brain injury and develop criteria for special education services as required by IDEA.

In **1995** a subcommittee of the MDE workgroup developed the first Traumatic Brain Injury Manual to help educators assess and serve students with TBI. Subsequent manual revisions have occurred in the intervening years.

School Statistics

When child-count statistics for TBI were first collected in Minnesota schools in 1992, Minnesota educators were serving 49 students under this category. In 2000, that number had increased to 335 students. The TBI child count has remained relatively stable since that time. Data indicates that students identified under the TBI category represent approximately 0.3 percent (3 in 1000) of all students receiving special education services in Minnesota. Unduplicated Minnesota

Department of Education child count data from recent years is reflective of this continued pattern. However, current TBI-related indicators from the Minnesota Department of Health indicate a much higher number of hospital discharges and emergency department visits of school age children and youth, many who report chronic or unresolved symptoms weeks or months after discharge. This would suggest that there may be an under-identification of students with TBI in the school setting.

Legal Definitions

The state definition of Traumatic Brain Injury is defined by the Minnesota Office of Revisor of Statutes and closely reflects the federal definition, which is established by the Code of Federal Regulations.

IDEA 2004 §8©(12) Child with a Disability.

Traumatic brain injury means an acquired injury to the brain caused by an external physical force, resulting in total or partial functional disability or psychosocial impairment, or both, that adversely affects a child's educational performance. Traumatic brain injury applies to open or closed head injuries resulting in impairments in one or more areas, such as cognition; language; memory; attention; reasoning; abstract thinking; judgment; problem- solving; sensory, perceptual and motor abilities; psychosocial behavior; physical functions; information processing; and speech. Traumatic brain injury does not apply to brain injuries that are congenital or degenerative, or to brain injuries induced by birth trauma.

The text on the following page is a summary of Minnesota Rule 3525.1348. To see the complete text, turn to Part 6 in this manual, or go to the Office of the Revisor of Statutes/Minnesota Rules website at: <https://www.revisor.mn.gov/rules/?id=3525.1348>

MINN. R. 3525.1348 TRAUMATIC BRAIN INJURY (TBI)

Subpart 1.

Definition. “Traumatic brain injury” means an acquired injury to the brain caused by an external physical force, resulting in total or partial functional disability or psychosocial impairment, or both, that may adversely affect a child’s educational performance and result in the need for special education and related services. The term applies to open or closed head injuries resulting in impairments in one or more areas, such as: cognition, speech/language, memory, attention, reasoning, abstract thinking, judgment, problem-solving, sensory, perceptual and motor abilities, psychosocial behavior, physical functions, and information processing. The term does not apply to brain injuries that are congenital or degenerative, or brain injuries induced by birth trauma.

Subp. 2.

Criteria. The team shall determine that a pupil is eligible and in need of special education and related services if the pupil meets the criterion in item A and the criteria in items B and C as documented by the information gathered according to item D:

There is documentation by a physician of a medically verified traumatic brain injury.

There is a functional impairment attributable to the traumatic brain injury that adversely affects educational performance in one or more of the following areas: intellectual-cognitive, academic, communication, motor, sensory, social-emotional-behavioral, and functional skill-adaptive behavior.

The functional impairments are not primarily the result of previously existing impairments, environmental or economic disadvantage, or cultural differences. Documentation of a functional impairment, utilizing a minimum of one tool and/or measure from each of two listed groups.

Spectrum of School Services for Students with TBI

The amount of school supports and services needed for a student who has sustained a TBI can vary greatly, depending upon the type and degree of injury. A concussion or mild TBI can result in short or long term symptoms. Although approximately 90% of all concussions/mild brain injuries resolve within the first three months, optimal recovery may actually take longer. Recovery can depend upon a number of factors, including the severity of the concussion, age, relative health, and follow-up care. In some cases, mild TBI can cause a wide range of functional short- or long-term changes that affect cognition, sensation, language, or emotions. Repeated mild TBIs occurring over months or years can result in cumulative neurological and cognitive deficits. Repeated mild TBIs occurring within a short period of time (e.g., hours, days, or weeks) can be catastrophic or fatal.

A moderate or severe TBI often results in long term or permanent impairment that can affect many brain-related functions associated with learning, and will typically require special education support in the school setting.

A spectrum of school supports and services that reflects this broad range of educational needs is provided on the following pages.

General Accommodations

Following a mild brain injury or concussion, physicians often prescribe a period of rest for the child or youth, where symptoms are closely monitored and all activity is suspended. Upon a return to school, students may require accommodations if their symptoms have not resolved. Examples of such accommodations may include a shortened school day schedule, no homework, rest breaks, quiet environment, extended transitions between classes, or preferential seating.

Symptoms resulting from most mild brain injuries/concussions are usually temporary and resolve within a few days or weeks. However, if the severity of the symptoms is such that it results in a substantial limitation of one or more major life activities for an extended period of time, the school and family may need to explore additional accommodations and supports for the student, including the development of a 504 Plan or IEP.

504 Plan

Section 504 of the 1973 Rehabilitation Act is a Civil Rights statute that protects persons of all ages with disabilities from discrimination, and covers public and private agencies that receive federal financial assistance, such as public schools. According to Section 504 and the Americans with Disabilities Amendments Act of 2008, a person is recognized as having a disability and may benefit from a 504 plan if he or she has a physical or mental impairment which substantially limits one or more major life activities, and there is a record of the impairment. [34C.F.R. & 104.3(j)].

The law provides that the 504 team make a determination of need as outlined in the Eligibility Analysis process in the Minnesota Compliance Manual for Section 504 of the Rehabilitation Act of 1973 (April 2011). The school district has a legal responsibility for learners who qualify for support under this Act, and the district is required to evaluate and develop a 504 Plan that directs regular education staff to meet the educational needs of these students through *accommodations* to the environment, curriculum, materials and instruction in the least restrictive environment.

Accommodations are defined as ‘adjustments and/or modifications that enable the learner to have equal access and opportunity to benefit from the educational program.’ Each school district has an assigned 504 coordinator who coordinates the development and implementation of the 504 Plan.

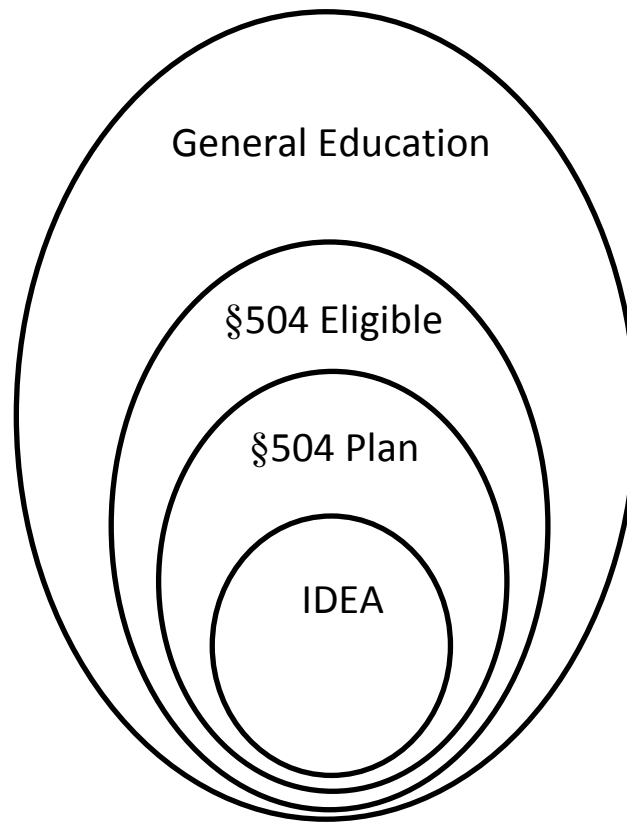
If, after careful consideration, the school determines that the student does *not* require a 504 plan at that time, the student may still be eligible in the future for protections under Section 504 as they relate to providing accommodations associated with their disability.

IDEA/Special Education Services

If it is determined that a student may require specially designed instruction in addition to accommodations, the school should initiate an evaluation to consider qualification for special education services under the TBI category. Determination of eligibility for special education services must be established before those services can be provided, including, but not limited to: general accommodations, modified curriculum, customized instruction, emergency evacuation procedures, specialized transportation, an Individual Health Plan, etc. Services and accommodations would then be documented on an Individualized Education Plan or IEP, and annually reviewed by the educational team.

Overlapping Domains: Section 504 and IDEA

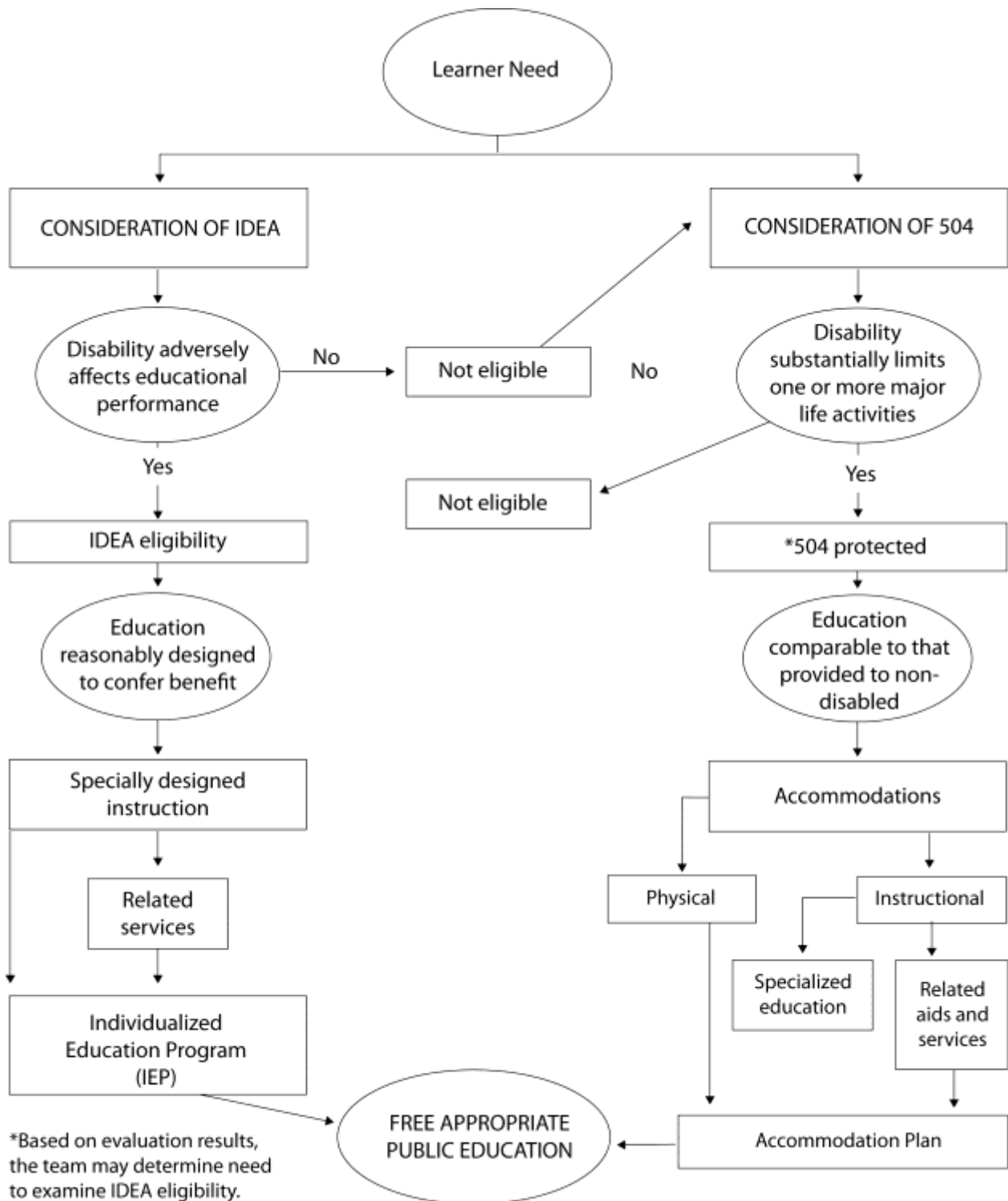
The diagram on the following page reflects the spectrum of services and supports provided to students in the school setting. If a student qualifies under IDEA, the student also qualifies under Section 504 and, therefore, is protected under its nondiscrimination protections. A student who has been determined to be qualified under Section 504, however, is not necessarily considered disabled under IDEA if the student does not meet one of the thirteen specific special education criteria defined in Minnesota Rule.



More information on Section 504 of the Rehabilitation Act as it relates to school services can be found in the Minnesota Department of Education Compliance Manual, updated in April of 2011, and available on the Department of Education's website.

For more information on the special education evaluation process, refer to Part 5 in this manual. The IDEA/504 Flow Chart on the following page provides a visual framework of the decision-making process when a school team is asked to make a determination for services and supports.

IDEA/504 Flow Chart



Taken from: MN Section 504 Manual (Revised 4/8/11)

Special Education Category of TBI

The Minnesota educational criteria defines Traumatic Brain Injury as ‘an acquired injury to the brain caused by an external physical force, resulting in total or partial functional disability and/or psychosocial impairment that may adversely affect a child’s educational performance and result in the need for special education and related services.’ To qualify for services under this category, there must be documentation of the TBI by a physician, and evidence of a functional impairment in one or more of seven listed areas that are not a result of a previously existing condition. It is strongly recommended that a school TBI specialist be involved in the evaluation and development of an IEP when there is evidence of a TBI in the school records, or in discussions with the parents.

Role of the TBI Specialist in the Schools

There currently is no specific teacher licensure for the Traumatic Brain Injury Category in Minnesota. However, it is strongly recommended that an educational TBI specialist be involved as a team member for any student who is receiving special education services under the TBI category. A TBI specialist is an educator who is knowledgeable in the area of TBI and has received related training or certification in this field.

Field Competencies for special education teachers working with TBI students were created in 2004, and includes Standards of Knowledge and Skills in the following areas:

- ❖ Foundations
- ❖ Development and Characteristics of Learners
- ❖ Individual Learning Differences
- ❖ Instructional Strategies
- ❖ Learning Environments and Social Interactions

TBI Field Competencies, *continued*

- ❖ Language
- ❖ Instructional Planning
- ❖ Evaluation
- ❖ Professional and Ethical Practice

(These Field Competencies can be found in the Appendices of this manual, and on the MN Low Incidence Projects website.)

Service Delivery Model for TBI

Service delivery provided by TBI specialists is typically defined as consultative and itinerant in nature, indicating that a specialist may serve many schools throughout a district or region, and provide indirect services to the student as part of the IEP team. The TBI specialist may also serve in other capacities, such as the Physical/Health Disabilities teacher. Service delivery models are determined at the local level, and are based on numerous factors. However, the general framework and definition of special education services is based on language stated in Minnesota Rules:

Direct

Defined as special education services provided by a teacher or related services professional when the services are related to instruction, including cooperative teaching.

(M.R. 3525.0210 subp. 14)

Indirect

Defined as special education services which include ongoing progress reviews; cooperative planning; consultation; demonstration teaching; modification and adaptation of the environment, curriculum, materials or equipment; and direct contact with the pupil to monitor and observe. Indirect services may be provided by a teacher or related services professional to another regular education teacher, special education teacher, related services professional, paraprofessional, support staff, parents, and public and nonpublic agencies to the extent that the services are written in the pupil's IEP or IFSP.

(M.R. 3525.0210 subp. 27)

Indirect service consultation should be focused on identified student needs, goals and objectives, and should be integrated into other services provided throughout the student's school day. This requires that all team members must work together collaboratively on an ongoing basis, which can be challenging when a team member is not in that school setting every day. Given the assumption that TBI specialists have an itinerant role and serve many schools, it is important to maintain 'visibility' and connections through documentation of services, contact logs, email, and phone calls. Sustaining open communication through these means is a vital and necessary way of staying connected to the students, families and educational teams.

Evidence-Based Practice

Evidence-based practice incorporates what is known through current research, and is complemented by the experience and knowledge of the practitioner, with the goal of achieving desired outcomes for the student within the educational program. Using evidence-based practice requires the educator to stay current with research in the field, and can include any of the following: Active participation in graduate level studies, reading/subscribing to professional journals,

participating in study groups and/or discussions with other professionals in the field, and membership in professional organizations. Evidence-based practice also suggests that educators continuously evaluate their current practices with regard to use of curriculum, evaluation tools, learning and instruction. The information provided in the following chapters of this manual have been carefully scrutinized to assure that they reflect the most current educational research in the field of TBI, providing a framework of evidence-based practice for Minnesota educators to apply with regard to evaluation, instruction, and methodology of students with traumatic brain injuries.

Other Key Services & Supports

Educational teams are made up of many critical service providers who, through strong collaborative efforts, create meaningful and high quality educational programming for students with TBI. Because of the unique and often complex physical, health and learning needs of these students, educational teams can sometimes be quite large and intimidating for families. Such a situation often requires a skilled and knowledgeable case manager with strong interpersonal communication and group facilitation skills.

All members are valued team participants, and expected to bring their own professional expertise and knowledge to the table. In addition to case managers, classroom teachers, special education teachers, and paraprofessionals, related services staff provides key services and supports, including:

- ❖ speech-language pathology and audiology services
- ❖ interpreting services
- ❖ psychological services
- ❖ physical and occupational therapy

Key Services & Supports, *continued*

- ❖ counseling services, including rehabilitation counseling
- ❖ school health services and school nurse services
- ❖ social work services in schools
- ❖ parent counseling and training

In addition to the listed services, there may be other related services that schools routinely make available under the umbrella of related services. The IEP team decides which related services a child needs and documents these services in the child's IEP.

School Health Services

The licensed school nurse (LSN) plays an important role on the team when serving a student with TBI. The school nurse is a member of the child study team, and assists with the special education evaluation by providing a health record review, summarizing sensory (hearing and vision) and health needs. The school nurse is a liaison with the family's physician or clinic nurse, and obtains medical documentation of the diagnosis, medical orders, medications and treatments as well as related information and resources. The school nurse contributes to ongoing discussions of the team regarding student needs, such as physical fatigue and endurance, school attendance, health care procedures, nutrition, sleep patterns, medications and side effects, return-to-school protocols following hospitalization, etc.

Licensed school nurses determine plans and treatments specific to students' health, development and capabilities that may include medication administration, nutrition, rest, communication and mental health interventions. More and more of the care involves medical supports such as

tracheostomies, ventilators, catheters, colostomies, limb braces, wheel chairs, respiratory care including oxygen, feeding tubes, insulin pumps and an increasing list of new devices. The school nurse determines if and when specific nursing tasks are delegated and to whom, and provides training and supervision.

As a member of the team, the school nurse attends IEP meetings when feasible and if present or via written communication, provides input to the student's needed accommodations, adaptations and related services needed during the school day. The school nurse is listed on the IFSP or IEP service page as a service provider, along with other health services staff that school nurses supervise, in providing IEP health-related services. The services are listed on the IFSP or IEP in any logical place and are included on the service grid. In addition, the school nurse may propose learning goals and objectives related to increasing a student's knowledge about his/her condition and developing self-care skills.

The licensed school nurse often takes a lead role in creating an *individualized healthcare plan (IHP)* for students with TBI who have a related health condition. Some conditions require additional documentation and procedural information than what is typically found in an IEP. An *emergency care plan (ECP)* may be developed by the school nurse if the student has a related health condition that could require urgent medical care while at school. The school nurse develops an emergency evacuation plan (EEP) if the health condition requires special consideration during an emergency evacuation or lock-down situation. The school nurse provides information and training to key educators and staff involved in providing daily services as well as emergency responses.

Additionally, the school nurse often assists with decisions pertaining to space and privacy for specialized healthcare procedures, special supplies, or equipment.

For the student who requires an IEP and whose family receives public support for health care costs such as Medical Assistance, health-related services documented in the IEP are covered services.

Part 2: An Overview of School Services

This means the school district can recoup the costs of services provided by licensed school nurses, physical therapists, occupational therapists and mental health specialists. Therefore, the student's health needs and necessary health-related services need to be considered and included when evaluating and planning for all special education students.

KEY FACTS: Part 2

- ❖ TBI means ‘caused by an external force’; the term does not apply to brain injuries that are congenital or degenerative, or brain injuries induced by birth trauma.
- ❖ The school eligibility criteria for TBI requires:
 - Documentation by a physician of a TBI; and
 - Documentation of a functional impairment that adversely affects educational performance; and that are not a result of previously existing impairments, environmental or economic disadvantage, or cultural differences
- ❖ TBI is under-represented as a category when compared to MN Department of Health hospital records.
- ❖ Depending upon the presenting educational needs, students with a diagnosis of TBI can be served through a variety of educational supports, services, settings, and programs.
- ❖ When evaluating a student who has a history or recent diagnosis of a TBI, a TBI specialist should be a member of the evaluation team.
- ❖ The licensed school nurse plays a critical role on the educational team as it relates to involvement in the educational evaluation, sensory screening, obtaining medical documentation, developing health care plans and/or emergency care plans, providing training to other staff, and serving as a liaison with the family’s physician or clinic nurse.

Part 3

Return to School Following a Mild TBI/Concussion

Defining Mild TBI

Causes

Recommendations Following a TBI

School Supports and Services

Possible Post-TBI Behaviors

Intervention Strategies

School Checklist: Return to School Following Mild TBI/Concussion

TBI Medical Documentation Form

Key Facts

Defining Mild TBI

A mild brain injury or concussion is defined as an injury caused by a bump, jolt or blow to the head that results in a period of altered consciousness (such as disorientation, confusion, inability to follow simple commands) or brief loss of consciousness of less than 30 minutes. The Centers for Disease Control and Prevention (CDC) indicates that up to 75 to 80 percent of all TBIs that occur each year are categorized as concussions or other forms of mild TBI.

Although approximately 90% of all concussions/mild brain injuries resolve within the first three months, optimal recovery may actually take longer. Recovery can depend upon a number of factors, including the severity of the concussion, age, relative health, and follow-up care. In some cases, mild TBI can cause a wide range of functional short- or long-term changes that affect cognition, sensation, language, or emotions. Repeated mild TBIs occurring over an extended period of time (i.e., months, years) can result in cumulative neurological and cognitive deficits. Repeated mild TBIs occurring within a short period of time (i.e., hours, days, or weeks) can be catastrophic or fatal.

Causes

Children aged 0 to 4 years, and older adolescents aged 15 to 19 years are two of the highest risk groups for mild TBI, with incidence higher for males than females. Studies have revealed that, even though they are labeled *mild*, an injury to the head and brain can have significant impact on a child or teen. Causes of mild traumatic brain injury can include falls, motor vehicle crashes, sports injuries, physical violence, and whiplash injuries. When injuries occur during the school day, the potential for a concussion is greatest during activities when there is a potential for collisions, such as during physical education (PE) class, recess/playground activities, or youth sports activities.

Part 3: Return to School Following a Mild TBI/Concussion

Students may also sustain a concussion outside of school, but then come to school where symptoms become apparent. Concussions can have a more serious effect on a young developing brain and need to be addressed quickly and correctly. Proper recognition and response to concussion symptoms can prevent further injury and help with recovery. Children who return to activities without proper care have an increased risk of more serious secondary injuries with longer-term consequences.

Recommendations Following a Mild TBI/Concussion

Complete Rest

In the case of a child or teen who has recently sustained a mild TBI, health care providers generally recommend complete rest for the first few days. After this period, a gradual return to school is recommended. Avoidance of any activity or situation that would put the student at risk of sustaining another injury is very important. Not only can the effects of a second injury be devastating, physical exertion is not recommended and can cause an increase in symptoms. This restriction should stay in place until the health care providers clears the student to resume normal physical activity.

Academic Activity Restrictions

In addition to limitations to a student's physical activity, restrictions should be placed on academic activity as well. Some students may need to attend school on a part time basis until their symptoms resolve and their fatigue is not so troublesome. Most students will also require accommodations to reduce work load, as too much mental strain on an injured brain can also cause someone to have worse, and lingering, post concussive symptoms.

Gradual Return

The key to a successful return to school is that it be done gradually. If symptoms return or worsen (or new symptoms occur with increased activity), stop these activities and take more time to rest and recover. As the days go by, there should be gradual improvement. Parents should monitor their child's progress closely during the first days and weeks following a return to school, with a return visit to the physician if warranted.

Open Communication

Open communication and a timely return to school are beneficial for the student. When considering the issue of when the student should return to school, it is helpful to inform the parents that a student's school schedule can be customized to ease the transition and accommodate such factors as ongoing fatigue and other persistent physical symptoms. Close monitoring by the school and parents will be required.

Primary Contact

Schools should have clear knowledge of who is the first point of contact in the school in the event of a reported mild TBI/concussion, e.g., school nurse, special education teacher, or principal. In turn, this individual should serve as a liaison to the parents and classroom teacher, relaying updated information on the student's condition and anticipated return to school. This liaison should also be aware of who the district 504 coordinator and TBI specialist is, what their services entail, and when and how to access those services, if needed.

School Supports and Services

School interventions can vary from accommodations in the general education classroom to more extensive modifications that may require customized special education services through the development of an Individualized Education Plan (IEP). Determining appropriate accommodations often depends upon the severity of the injury, how the injury impacts the student's functioning, and the length of time the student is symptomatic. Such decisions are based on the legal premise outlined in the U.S. Department of Education Regulations that all students be provided with a 'free appropriate public education' (FAPE) that is appropriate to their individual and changing needs.

Educational needs and accommodations can change quickly in the first weeks and months following a TBI. This may require frequent checking in with the student to assess whether general classroom accommodations continue to be appropriate or if changes need to be made. This will ensure that the plans are reflective of current educational needs.

There are two forms found at the end of this section entitled, *School Checklist: Return to School Following a Mild TBI/Concussion* and the *TBI Medical Documentation Form* that may be helpful to the school team when supporting the student's return to school following a mild TBI/concussion.

Possible Post-TBI Behaviors

The characteristics of students with mild brain injury are variable. These behaviors are often a result of neurological changes and should be considered relative to a student's functioning before the injury. Some considerations are included below.

- ❖ Medical appointments or post-injury fatigue may result in intermittent or unexpected absences.
- ❖ Expect the student to show rapid and pronounced variation in school performance from day to day or morning to afternoon.

Part 3: Return to School Following a Mild TBI/Concussion

Possible Post-TBI Behaviors, *continued*

- ❖ The student may require more time to process directions and complete tasks.
- ❖ The student may demonstrate distractible or inattentive behaviors.
- ❖ Academic performance may be different than before the injury.
- ❖ The student may not tolerate, or may become more irritable with, increased stimulation.
- ❖ The student may have difficulty organizing lengthy or multi-step tasks, and may have difficulty comprehending large reading assignments.
- ❖ The student may experience difficulty with more advanced subject areas (algebra, geometry) and/or cumulative learning (foreign language study).
- ❖ Relationships with friends may change.
- ❖ The student may demonstrate new behaviors such as impulsivity, excessive moodiness, disrespectful/ inappropriate comments, aggressive behavior, decreased frustration tolerance, or depression.
- ❖ The student may complain of headaches, and may be observed to close one eye or squint.
- ❖ The student may have side effects from medications that result in fatigue, impaired memory and organization, or unexpected behaviors.
- ❖ Transitions from one class or activity to another may take extra time or preparation.
- ❖ The student may have difficulty attending to two tasks simultaneously (e.g., note taking and listening).

Note: If behaviors and/or cognitive issues persist, and the severity is such that it results in a substantial limitation of one or more major life activities as defined by Section 504 of the Rehabilitation Act of 1973, it may be appropriate to consider a 504 Plan or a special education evaluation.

Intervention Strategies

The strategies below are grouped by areas of need, and have been found to be helpful when a student with a TBI returns to school following an injury. One or more strategies may apply.

Family Involvement

The student may benefit from:

- ❖ Parents contacting the school prior to the student's return.
- ❖ Help with organizing school materials, assignments, homework and projects.
- ❖ Arrangements for additional tutoring if recommended.
- ❖ Scheduling medical appointments, when possible, around school attendance.

Physical and Mental Energy Levels

The student may benefit from:

- ❖ Shorter days when first returning to school.
- ❖ More time to pass in hallways, or pass when there is less congestion.
- ❖ A modified class schedule to optimize peak energy levels for most difficult subjects.
- ❖ A short nap or an opportunity for rest in a quiet area.

Part 3: Return to School Following a Mild TBI/Concussion

Medical Management

The student may benefit from:

- ❖ Communication between the home and school regarding medications and possible side effects; include the school nurse in such conversations.
- ❖ Reminders about going to the nurse's office for medications or health care procedures.

Behavior/Emotional Adjustment

The student may benefit from:

- ❖ Minimizing changes in student's routine.
- ❖ Providing choices, and flexibility with expectations.
- ❖ Self-review of behavior at the end of the day (e.g., diary or contact log).
- ❖ Pro-active behavior intervention strategies that identify and avoid triggers, structure a positive learning environment, and help the student return to baseline emotional functioning.
- ❖ Contact with the TBI specialist, school counselor, social worker, or psychologist to facilitate student insight into emotional changes, and assist in developing coping and problem-solving strategies.

Social Support

The student may benefit from:

- ❖ Identification of a staff person to monitor student's readjustment to school (attendance, assignment completion, or other potential concerns).
- ❖ A buddy system to model appropriate social skills, particularly in unstructured situations.
- ❖ Supervision & support in unstructured settings (lunchroom, playground, locker room)
- ❖ Participation in community clubs or after-school programs.
- ❖ Provision of older-grade friend or peer tutor for specific academic or social activities, tutoring, homework, and lunch time.
- ❖ Discussions centering on conflict resolution if conflicts with peers arise.

Attention

The student may benefit from:

- ❖ Shortened assignments, breaking tasks down into smaller parts, or modifying due dates.
- ❖ Altering the seating assignment or proximity to the teacher(s) to promote focused attention.
- ❖ Minimizing distractions in the student's auditory/visual space.
- ❖ Re-direction to tasks with verbal, physical or gestural prompts.
- ❖ Taking tests in a quiet area, with additional time provided for completion.

Memory/Organization/Processing Speed

The student may benefit from:

- ❖ Organizing information in advance to assist with transitions.
- ❖ Assistance with completing missed work/make-up assignments and cumulative subjects such as foreign languages, algebra, etc.
- ❖ Assistance with prioritizing tasks and/or assignments
- ❖ Decreasing extraneous or non-essential information from worksheets.
- ❖ An extra set of text books and/or access to electronic texts on CD.
- ❖ A daily schedule, a homework sheet, and labeled organizational system to assist with information retrieval, and documenting assignments and routines.
- ❖ Initially reducing changes in the daily routine while maintaining consistency and structure.
- ❖ Simplifying and breaking down multiple-step directions or large projects into smaller steps or chunks, and being asked by teacher to restate directions to assure understanding.
- ❖ Varied methods of lesson presentation (e.g., smaller groups, electronic presentations, demonstrations, hands-on activities and experiments, simulations, and games).
- ❖ Individualized instruction addressing memory and organizational strategies.
- ❖ Use of a buddy system, which may be helpful with task organization.
- ❖ Use of assistive technology such as word processors, computers, interactive white boards, smart phone applications, PDAs, electronic tablets, recorders, calculators, digital pens, etc.
- ❖ Instruction addressing study skills (e.g., survey, read, recite, revise; review definitions of new vocabulary; summarize/highlight main points, etc.).

Part 3: Return to School Following a Mild TBI/Concussion

Expressive/Receptive Language

The student may benefit from:

- ❖ Homework assignments in written and verbal/recorded form.
- ❖ Modifying the length of verbal directions, and verifying understanding of directions.
- ❖ Use of specific vs. open-ended questions, which may decrease student frustration with language formulation and word retrieval.

Reading or Visual Skills

The student may benefit from:

- ❖ Availability of electronic books and text-to-speech tools to supplement existing reading materials for students with reading/visual impairments.
- ❖ Orally presented tests.
- ❖ Opportunities to review/receive copies of other students' notes in alternative formats.
- ❖ Short-term remedial reading instruction and modified expectations, due to decreased reading speed and comprehension.
- ❖ Modifications to print/font size and provision of a large key calculator.

Math Skills

The student may benefit from:

- ❖ Additional help, tools, or methods for recalling math facts, formulas, etc.
- ❖ Customized instruction in applied calculation skills.

Part 3: Return to School Following a Mild TBI/Concussion

Math Skills, *continued*

- ❖ The use of grid paper to organize columns for multiplication/division (if there are visual-perceptual difficulties).
- ❖ Short-term remedial math if they are struggling with the curriculum.

Physical and Motor Coordination Skills

The student may benefit from:

- ❖ Assistance with written tasks.
- ❖ Reduction in written work and utilizing dictation and audio/video recordings as a supplement or alternative.
- ❖ A buddy system for written work and physical safety.
- ❖ Extra time for assignment completion and getting from place to place.
- ❖ Additional safety considerations in activities such as climbing, jumping, and contact sports during recess and physical education class.
- ❖ The creation of an emergency evacuation plan for learners with associated mobility impairments.
- ❖ Assurance that the school environment is fully accessible, including hallways, classrooms, restrooms, lunchroom, main door entry, etc.

Sports/Recreational Activities

It is recommended that students:

- ❖ Follow guidelines related to returning to physical education or sports, including *obtaining doctor's prior approval*.

Part 3: Return to School Following a Mild TBI/Concussion

Sports/Recreational Activities, *continued*

- ❖ Avoid contact sports (football, hockey, soccer) or in-line skating, skiing/skateboarding for at least 6 months, or as directed by your medical provider.
- ❖ Obtain medical clearance before resuming operation of mechanical vehicles.
- ❖ Wear protective gear, including helmets designed and rated for the activity, when engaging in sports/recreational activities or using motorized vehicles.

District/Policy Support

It is recommended that schools:

- ❖ Allow an increase in the number of excused absences for health reasons, and allow resulting modifications to the grading policy.
- ❖ Approve early dismissal for outside appointments.
- ❖ Modify course load requirements or completion if the student is unable to complete.

Source: The above-listed behaviors and interventions were taken with permission from a brochure entitled, *Guidelines for School Re-Entry*, published by Hennepin County Medical Center's Pediatric Brain Injury Program.

Return to School and Medical Documentation Forms

The *School Checklist: Return to School Following a Mild TBI/Concussion* and *TBI Medical Documentation Form* found on the following pages are provided to assist the school team with the student's return to school following a mild TBI/concussion. These are SAMPLE forms ONLY. The fillable forms are available in electronic format on the MN Low Incidence Projects website.

Part 3: Return to School Following a Mild TBI/Concussion

School Checklist: Return to School Following a Mild TBI/Concussion

(Sample ONLY. Electronic Fillable forms are available on the MN Low Incidence Projects website.)

Student Name: _____ School/Grade: _____

Parent/Guardian Name: _____ Date of Injury: _____

Immediately Following Injury

Upon hearing of the injury, the school representative will:

- Obtain release of information between the school, parent, and medical provider
- Gather/obtain copies of pertinent information (including the documentation of the medical diagnosis) from medical provider(s) and parents/guardians for school file
- Contact the student's classroom teacher(s) to:
 - Inform them of the student's condition
 - Discuss potential or recommended educational accommodations
 - Request that they monitor student's status following return to school, and report any concerns or additional accommodations

If Symptoms Appear To Be Chronic

The school will:

- Review academic record prior to injury, and concerns shared by classroom teacher(s), parent/guardians, or other staff
- Contact student's family to provide information and resources about mild TBI and potential educational accommodations

Part 3: Return to School Following a Mild TBI/Concussion

School Checklist: Return to School Following a Mild TBI/Concussion, *continued*

- Contact the 504 coordinator to a request 504 evaluation if the resulting educational needs are chronic and/or severe (resulting in substantial limitation of one or more major life activities for an extended period of time). *Note:* This process requires parental notice and signed consent
- Follow due process requirements and initiate referral for a special education evaluation if warranted; and incorporate pertinent medical information from clinic evaluations, out-patient and/or neuropsychologist reports
- Develop IEP if student qualifies for special education services under the TBI category
- Implement accommodations in all educational settings as needed
- Collaborate with other school staff and conduct staff/peer inservices as appropriate
- Develop formal plan for communication with medical and therapy staff, the student, and the family with regard to ongoing physical, health and learning needs
- Support the student in communicating their needs and increasing self-advocacy skills, and assure that these areas are as incorporated into their IEP goals and objectives

Ongoing

The team will:

- Informally re-evaluate student's needs and modify educational plan accordingly
- Maintain periodic contact with parent(s) about the student's changing needs and level of progress, following guidelines and laws set forth by Section 504 and IDEA

Part 3: Return to School Following a Mild TBI/Concussion

TBI Medical Documentation Form

(Sample ONLY. Electronic Fillable forms are available on the MN Low Incidence Projects website.)

NOTE: To be completed and signed by physician and mailed or returned to school nurse or administrator prior to student's return to school.

Child's name: _____

Date of Birth: _____

This child has sustained a traumatic brain injury and has been treated by a physician.

Clinic Date: _____

Emergency room Date: _____

Hospitalization Admission Date: _____ Discharge Date: _____

Observed symptoms at the time of medical exam (please check those that apply):

- | | | |
|--|--|--|
| <input type="checkbox"/> Physical | <input type="checkbox"/> Cognitive | <input type="checkbox"/> Behavioral/Mood |
| <input type="checkbox"/> Headache | <input type="checkbox"/> Confusion | <input type="checkbox"/> Irritability |
| <input type="checkbox"/> Sleep changes | <input type="checkbox"/> Attention problems | <input type="checkbox"/> Agitation |
| <input type="checkbox"/> Fatigue | <input type="checkbox"/> Difficulty concentrating | <input type="checkbox"/> Frustration |
| <input type="checkbox"/> Nausea/vomiting | <input type="checkbox"/> Memory problems | <input type="checkbox"/> Depression |
| <input type="checkbox"/> Dizziness | <input type="checkbox"/> Slowed processing speed | <input type="checkbox"/> Anxiety |
| <input type="checkbox"/> Problems with balance | <input type="checkbox"/> Difficulty with organization | <input type="checkbox"/> Problems with motivation |
| <input type="checkbox"/> Sensitivity to light and/or sound | <input type="checkbox"/> Impaired judgment/impulse control | <input type="checkbox"/> Lack of social energy or engagement |
| <input type="checkbox"/> Visual changes | <input type="checkbox"/> Difficulty with new learning | <input type="checkbox"/> Difficulty with initiation |
| <input type="checkbox"/> Hearing problems | <input type="checkbox"/> Difficulty problem solving | <input type="checkbox"/> Mood swings |
| <input type="checkbox"/> Tinnitus (ringing in ears) | <input type="checkbox"/> Decrease in academic skills | <input type="checkbox"/> Inappropriate behaviors |
| <input type="checkbox"/> Change in speech | <input type="checkbox"/> Difficulty with transitions | <input type="checkbox"/> Developmental regression |
| <input type="checkbox"/> Seizures | <input type="checkbox"/> Trouble multi-tasking | <input type="checkbox"/> Self-centered behavior |
| <input type="checkbox"/> Motor skill deficits | <input type="checkbox"/> Difficulty with planning | <input type="checkbox"/> Impulsivity/restlessness |
| <input type="checkbox"/> Sensory impairment | <input type="checkbox"/> Trouble orienting | <input type="checkbox"/> Feelings of grief & loss |
| <input type="checkbox"/> Physical impairment | <input type="checkbox"/> Trouble sequencing | <input type="checkbox"/> Low self-esteem |
| <input type="checkbox"/> Change in strength | <input type="checkbox"/> Change in expressive/receptive language | <input type="checkbox"/> Difficulty with peer relationships |
| | <input type="checkbox"/> Poor insight | <input type="checkbox"/> Emotional lability |
| | | <input type="checkbox"/> Lack of motivation |
| | | <input type="checkbox"/> Vulnerability |

Part 3: Return to School Following a Mild TBI/Concussion

TBI Medical Documentation Form, *continued*

Limitations in strength/duration: _____

Medications: _____

Restrictions:

Physical Restrictions (e.g., physical education class, recess, stairs, etc.) Yes No

Academic Restrictions (e.g., school attendance, schedule, homework, etc.) Yes No

List restrictions and recommended time period: _____

Sports (Check one): Yes - Able to participate No participation at this time

If yes, list any restrictions: _____

If additional information is needed, contact:

Clinic or Hospital Contact / Name: _____

Clinic or Hospital Contact / Phone: _____

Printed Physician's Name _____

Physician's Signature (Required) _____

Date: _____

*Attach pertinent documentation to assist with educational programming.

KEY FACTS: Part 3

- ❖ A TBI can occur without loss of consciousness, such as a concussion.
- ❖ Approximately 90% of all diagnosed TBIs resolve within the first 3 months.
- ❖ Repeated TBIs (including concussions) can result in cumulative and/or permanent damage, or death.
- ❖ *Complete* rest is a necessary requirement following a concussion/TBI.
- ❖ Close monitoring of physical symptoms and cognitive functioning is essential for the student returning to school following a TBI.
- ❖ Needs and supports can change quickly in the weeks and months following a TBI.
- ❖ Once made aware of a reported injury, the school must work closely with the family and other involved agencies to assure a smooth and timely return to academics and school activities.

Part 4

School Re-Entry Following Extended Hospitalization

Initial Evaluation

Progress Monitoring

TBI School Re-Entry Form

TBI Medical Documentation Form

Key Facts

School Re-Entry Following Extended Hospitalization

When a child is hospitalized as a result of a moderate or severe traumatic brain injury, the recovery process can be long and arduous for the child and family. It is extremely important that the health care professionals, parents and school staff work closely together throughout this period to assure a smooth re-entry from hospital (or rehabilitation center) to home and school. A realistic timeline in regard to discharge, special education evaluation, and school re-entry should be developed. Identification of related roles and responsibilities of team members are also critical components of a re-entry process.

Initial Evaluation

It is critical that a special education evaluation be completed prior to school re-entry if the medical team, parent/guardian and/or school staff feel that special education services are warranted. Determination of eligibility under a special education category must be established before special education services can be provided, including, but not limited to specialized transportation, modified curriculum, customized instruction, emergency evacuation procedures, etc. (It should be noted that some of these supports may also be provided under a 504 Plan and covered under general education funds.)

When conducting an evaluation, student observations are required and can take place in the hospital, rehabilitation center, or student's home. The intent of an observation is to determine the student's current educational strengths, abilities and needs. Therefore, it is recommended that observations occur when the student is engaged in academic or functional skills activities in the above-mentioned settings whenever possible.

Following extended hospitalization/rehabilitation, there is rarely an opportunity for a traditional evaluation in the school setting. Therefore, the school team will need to utilize whatever pertinent

Part 4: School Re-Entry Following Extended Hospitalization

information can be gathered, including recent reports or evaluations completed by physicians, therapists, neuropsychologists, or hospital school staff. Information provided by the parent/guardian, previous school records, and observations conducted in the medical and/or home settings can also be helpful. School staff may also need to make arrangements to complete portions of the evaluation in the medical or home setting, requiring flexibility on the part of all team members.

Progress Monitoring

Educational needs and accommodations can change quickly in the first months/year following injury. This will require frequent progress monitoring and subsequent modifications to the educational program and the IEP than is typically seen. It is recommended that the school team document in the initial IEP that the student will continue to be observed following school re-entry, and that the IEP should be reviewed by a specified date (usually 3 to 6 months following re-entry, with a customized IEP review schedule thereafter). This will ensure that the IEP is reflective of current educational needs.

TBI School Re-Entry & Medical Documentation Forms

The TBI School Re-Entry Form and Medical Documentation Forms found on the following pages are provided to assist the school team with the student's transition from hospital or rehabilitation center to the school following a TBI that resulted in inpatient care and treatment for an extended period of time. Portions of these guidelines may also be helpful when evaluating a student with a prior history of a TBI, but who has not previously qualified for special education services under the TBI category.

These forms are available as fillable electronic forms in the Appendices section of this manual.

Part 4: School Re-Entry Following Extended Hospitalization

TBI School Re-Entry Form Following Extended Hospitalization/Rehabilitation

(Sample ONLY. Electronic Fillable forms are available on the MN Low Incidence Projects website.)

Student Name: _____ **School/Grade:** _____

Parent/Guardian Name: _____ **Phone #:** _____

Date of Injury: _____

Tentative Discharge Date: _____

Following Hospital Admission

The hospital representative will:

- Request that the parent/guardian sign a release of information, allowing contact with the school.
- Contact the school representative (e.g., school principal, school nurse, special education administration, and/or TBI specialist if known)

The school representative will:

- Attend care conferences as appropriate
- Obtain release of information between school/hospital
- Contact the child's case manager at the hospital to discuss the school's re-entry issues/questions, and provide pertinent educational information to hospital staff
- Contact the school administrator, school nurse, and/or the child's classroom teachers to:
 - Inform them of the child's condition
 - Obtain/review current educational records

After Student's Condition Has Stabilized

The hospital and school team will:

- Discuss important dates such as anticipated timeline for discharge/school re-entry; and school re-entry plans, including school calendar considerations.
- Discuss the full re-entry plan, including potential environmental and educational needs and accommodations, including shortened school days if required.

Part 4: School Re-Entry Following Extended Hospitalization

TBI School Re-Entry Form Following Extended Hospitalization/Rehabilitation, *continued*

The school representative will:

- Confirm who the primary school contact will be for the remainder of the re-entry process
- (If requested) Provide the hospital teachers with appropriate educational materials
- Attend care conferences as appropriate
- Obtain copies of hospital updates, evaluations, and documentation of the medical diagnosis of TBI; this information should then be incorporated into the school evaluation process.
- Contact the parent/guardian and initiate special education due process requirements and evaluation.

Prior to Hospital Discharge/School Re-Entry

The school educational team will:

- Complete special education evaluation and develop an IEP Note: It is recommended that the school evaluation results and IEP meetings be combined with the hospital discharge planning meeting
- Assure that all educational supports/accommodations are in place prior to discharge
- Collaborate with other school staff as necessary (e.g., school nurse, OT, PT, speech/language clinician, DAPE instructor, etc.), and contact the student's family to provide information and resources about the student's brain injury and accommodations and/or modifications in the school setting

Arrival at School

The team will:

- Continue to communicate with medical/hospital staff and family with regard to ongoing physical, health and learning needs as they relate to the student's educational program

Following arrival at school, the team will:

- Further modify school environments to meet the student's needs
- Length of school day
- Rest periods
- Specialized transportation

Part 4: School Re-Entry Following Extended Hospitalization

TBI School Re-Entry Form Following Extended Hospitalization/Rehabilitation, *continued*

(Following arrival at school, continued)

- Schedule
- Check-in contact
- Technology supports
- Emergency evacuation procedures
- Other
- Provide staff and peer inservices as appropriate

After First Weeks in School/Ongoing

The team will:

- Re-evaluate the student's needs and modify educational plan accordingly
- Maintain periodic contact with parent/guardian, teacher, and medical team about the student's changing needs and progress

Note: For an electronic copy of this and other related documents, go to the MN Low Incidence Projects website at: www.mnlowincidenceprojects.org and click on the TBI link.

Part 4: School Re-Entry Following Extended Hospitalization

TBI Medical Documentation Form

(Sample ONLY. Fillable forms are available in electronic format on the MN Low Incidence Projects website.)

NOTE: To be completed and signed by physician and mailed or returned to school nurse or administrator prior to student's return to school.

Child's name: _____

Date of Birth: _____

This child has sustained a traumatic brain injury and has been treated by a physician.

Clinic Date: _____

Emergency room Date: _____

Hospitalization Admission Date: _____ Discharge Date: _____

Observed symptoms at the time of medical exam (please check those that apply):

- | | | |
|--|--|--|
| <input type="checkbox"/> Physical | <input type="checkbox"/> Cognitive | <input type="checkbox"/> Behavioral/Mood |
| <input type="checkbox"/> Headache | <input type="checkbox"/> Confusion | <input type="checkbox"/> Irritability |
| <input type="checkbox"/> Sleep changes | <input type="checkbox"/> Attention problems | <input type="checkbox"/> Agitation |
| <input type="checkbox"/> Fatigue | <input type="checkbox"/> Difficulty concentrating | <input type="checkbox"/> Frustration |
| <input type="checkbox"/> Nausea/vomiting | <input type="checkbox"/> Memory problems | <input type="checkbox"/> Depression |
| <input type="checkbox"/> Dizziness | <input type="checkbox"/> Slowed processing speed | <input type="checkbox"/> Anxiety |
| <input type="checkbox"/> Problems with balance | <input type="checkbox"/> Difficulty with organization | <input type="checkbox"/> Problems with motivation |
| <input type="checkbox"/> Sensitivity to light and/or sound | <input type="checkbox"/> Impaired judgment/impulse control | <input type="checkbox"/> Lack of social energy or engagement |
| <input type="checkbox"/> Visual changes | <input type="checkbox"/> Difficulty with new learning | <input type="checkbox"/> Difficulty with initiation |
| <input type="checkbox"/> Hearing problems | <input type="checkbox"/> Difficulty problem solving | <input type="checkbox"/> Mood swings |
| <input type="checkbox"/> Tinnitus (ringing in ears) | <input type="checkbox"/> Decrease in academic skills | <input type="checkbox"/> Inappropriate behaviors |
| <input type="checkbox"/> Change in speech | <input type="checkbox"/> Difficulty with transitions | <input type="checkbox"/> Developmental regression |
| <input type="checkbox"/> Seizures | <input type="checkbox"/> Trouble multi-tasking | <input type="checkbox"/> Self-centered behavior |
| <input type="checkbox"/> Motor skill deficits | <input type="checkbox"/> Difficulty with planning | <input type="checkbox"/> Impulsivity/restlessness |
| <input type="checkbox"/> Sensory impairment | <input type="checkbox"/> Trouble orienting | <input type="checkbox"/> Feelings of grief & loss |
| <input type="checkbox"/> Physical impairment | <input type="checkbox"/> Trouble sequencing | <input type="checkbox"/> Low self-esteem |
| <input type="checkbox"/> Change in strength | <input type="checkbox"/> Change in expressive/receptive language | <input type="checkbox"/> Difficulty with peer relationships |
| | <input type="checkbox"/> Poor insight | <input type="checkbox"/> Emotional lability |
| | | <input type="checkbox"/> Lack of motivation |
| | | <input type="checkbox"/> Vulnerability |

Part 4: School Re-Entry Following Extended Hospitalization

TBI Medical Documentation Form, *continued*

Limitations in strength/duration: _____

Medications: _____

Restrictions:

Physical Restrictions (e.g., physical education class, recess, stairs, etc.) Yes No

Academic Restrictions (e.g., school attendance, schedule, homework, etc.) Yes No

List restrictions and recommended time period: _____

Sports (Check one): Yes - Able to participate No participation at this time

If yes, list any restrictions: _____

If additional information is needed, contact:

Clinic or Hospital Contact / Name: _____

Clinic or Hospital Contact / Phone: _____

Printed Physician's Name: _____

Physician's Signature (Required): _____

Date: _____

*Attach pertinent documentation to assist with educational programming.

KEY FACTS: Part 4

- ❖ When planning a successful school re-entry, communication between the school, family and hospital or medical center is essential.
- ❖ In cases where the student has had an extended hospital stay, the special education evaluation and IEP should be completed before the student returns to school, ensuring that the necessary services and accommodations are in place.
- ❖ Skill deficits may not be immediately apparent when a student returns to school following a TBI, and can be masked by accelerated physical recovery and eased expectations. In some cases, symptoms can worsen and/or become chronic with the passage of time, increasingly impacting school performance.
- ❖ Given the fluid and changing nature of TBI, a student may need to be re-evaluated periodically during the first months/year following the injury.
- ❖ Accommodations to the environment and modifications to curriculum, instructional methods, and grading are often necessary.

Part 5

Educational Evaluation

Members of an Evaluation Team

Utilizing Evaluation Data from Other Agencies

Neuropsychological Evaluation

Required Components of a School Evaluation

Pre-Injury Profile

Identifying Uneven Cognitive Abilities

Choosing the Correct Tools

Intellectual and Standardized Achievement Tools

Optimal Testing Conditions

Modifying Standardized Tests

Functional Evaluation Tools & Methods

Informal Evaluation

Systematic Observations

Functional Evaluation Tools Specific to TBI

Traumatic Brain Injury Checklist

Interpretation of Evaluation Results

Re-Evaluation

Considerations for Evaluating the Very Young Child

Evaluation Tools to Consider for Students K-12

Key Facts

Purpose of an Educational Evaluation

An educational evaluation of a student with a Traumatic Brain Injury has several purposes, including the following:

- ❖ To determine a baseline for behavior
- ❖ To identify changing patterns of student performance
- ❖ To isolate subtle impairments
- ❖ To assess cognitive abilities
- ❖ To identify barriers to independent and productive functioning
- ❖ To provide essential periodic review

To determine eligibility for qualification of special education services under the TBI Category, a team must first assure that there is medical documentation of the traumatic brain injury provided by a physician. (Refer to Part 6: Eligibility for more detailed information about medical documentation requirements.) The team must then verify that there is a functional impairment attributable to the TBI that adversely affects the student's educational performance in one or more of seven areas listed in the [Minnesota State Criteria 3525.1348](#). This is determined through a comprehensive special education evaluation.

Appearances Can Be Misleading

Children returning to school following a traumatic brain injury may appear to have made a good recovery. Physical functioning often improves considerably, speech may be intact, and some pre-injury skills are often retained. This is often misleading and can conceal serious cognitive, sensory, and self-regulatory deficits resulting from the brain injury. A broad-based evaluation is often

needed, and should include a thorough review of medical information, educational history, and a variety of formal and informal tools.

Referral

A referral for a special education evaluation can come from a variety of sources, including parents, teachers, school nurses, or the medical or rehabilitative communities. All school districts have a formal referral process and guidelines. Pre-referral intervention procedures are not necessary when a medically diagnosed TBI has recently occurred and there is concern regarding educational performance.

Thoughtful Approach Needed

Effective educational planning for all students with special needs requires a thoughtful and thorough approach to the evaluation process. This is especially true for students with TBI. Because of the unique and complex circumstances associated with brain injury, there are additional considerations to take into account:

- ❖ A student with a TBI may have an unusual profile of abilities and needs that is based on pre-existing knowledge prior to the injury, and injury-related deficits. These deficits may negatively affect school performance, but may not be detected on traditional tests.
- ❖ The consequences of frontal lobe injury are typically not detected by commonly used tests of intelligence, academic performance, and language skills.

Considerations for Evaluation Planning, *continued*

- ❖ Ongoing neurologic recovery may invalidate standardized, norm-referenced assessment results, necessitating the use of a variety of tools and methods to accurately measure student progress.
- ❖ Certain types of injury may have delayed consequences, again requiring special consideration when evaluating the student.
- ❖ TBI is associated with inconsistent performance, which may invalidate test performance on any given day.
- ❖ Students may react unpredictably to being back in school- positively or negatively- requiring special thoughtfulness in interpreting test results.

Additionally, a specifically designed approach to the evaluation process is crucial to ensure a successful educational experience for the student with TBI. When transitioning from hospital to school, a successful re-entry process requires careful planning, a thorough evaluation, and comprehensive knowledge of TBI and related implications for students. Effective evaluation of a student with TBI entails a variety of strategies, methods, and tools to identify current educational needs and accommodations that will allow the student to successfully function in school settings.

Members of an Evaluation Team

Although there currently is no specific teacher licensure for the Traumatic Brain Injury Category in Minnesota, it is strongly recommended that the evaluation team include an educational TBI specialist who is knowledgeable and has had training in the area of traumatic brain injury.

Other members of a multidisciplinary evaluation team may include (but are not limited to) the following people:

- ❖ Special education teacher
- ❖ School nurse
- ❖ School psychologist
- ❖ Developmental adapted physical education (DAPE) teacher
- ❖ General education teacher
- ❖ Therapist (occupational therapist, physical therapist, speech/language clinician)
- ❖ Other appropriate related service providers

Utilizing Evaluation Data from Other Agencies

If a student has been recently evaluated in a medical, therapeutic or school setting, this information should be considered in terms of relevance to the educational programming of the student.

Information from the medical community such as results from neuropsychological evaluations, rehabilitation therapy reports, etc., may be integrated into the school evaluation if the information is felt to be of value in identifying the student's educational needs, accommodations, and goals.

School personnel will be required to obtain a release of information from the parent/guardian before they are allowed to access confidential information from other agencies. Collaboration, sharing of information and careful planning between medical/therapy providers, the school, and the family is critical in assuring a comprehensive and meaningful evaluation of the student.

Neuropsychological Evaluation

Specialized tests of cognitive functioning are frequently conducted by neuropsychologists, and are typically performed in a clinical setting. Results from these tests are helpful in documenting more subtle learning deficits, and linking such deficits with brain function. Neuropsychologists are also skilled in identifying compensatory skill areas, accommodations, and strategies.

Many students undergo a neuropsychological evaluation when hospitalized, during rehabilitation, or as a follow-up process because of ongoing learning difficulties. A neuropsychologist can help educators form a more complete picture of a student's abilities by providing a comprehensive picture of the cognitive functions that are vital for learning. Performance-based measures of intelligence are able to detect deficits in the areas of time-dependent motor abilities, subtle aspects of language, attention and memory. The results can also assist teams in predicting outcomes and in selecting programming and remediation targets.

In addition to *intellectual functioning* and *information processing*, a neuropsychological battery can also provide information in the following cognitive areas:

- ❖ Organizational skills
- ❖ Sensory and perceptual functioning
- ❖ Language comprehension and expression
- ❖ Attention, concentration, and alertness
- ❖ Problem solving and judgment
- ❖ Flexibility of thought process
- ❖ Memory and sequencing ability

Required Components of a School Evaluation

When evaluating a student who is being considered for qualification under the category of TBI, the team should include a variety of formal evaluation tools. This will provide the most comprehensive profile of the student's learning and behavioral needs. A combination of the following measures should be included in the evaluation:

- ❖ Standardized and norm-referenced measures
- ❖ Criterion-referenced measures
- ❖ Personality/projective measures
- ❖ Sociometric measures

Informal evaluation tools and activities should also be a part of every evaluation, and should include at least one of the following:

- ❖ Checklists (such as the TBI Checklist)
- ❖ Classroom or work samples
- ❖ Student file review
- ❖ Educational and medical history (pre- and post-injury)
- ❖ Systematic behavioral observations in a variety of educational settings
- ❖ Interviews with student, family, and educators familiar with the student

Pre-Injury Profile

It is crucial to the evaluation process to gather information about the student prior to the injury, including learning style, academic profile, behavior, and interests. Information about the student's

pre-injury status can help with interpretation of post-injury evaluations. Comparing the student's behavior before and after the injury is important in highlighting the changes that have occurred, both those directly related to the injury, and in reaction to the injury.

A student's school history, such as past standardized test records, history of learning or behavioral difficulties, past placement, past evaluations, work samples, etc. should be reviewed to obtain a pre-injury profile of the student.

Identifying Uneven Cognitive Abilities

One of the primary hallmarks of a brain injury on a child's performance is unevenness in abilities across different settings over time, and across different content areas. This variability can be misleading and confusing to both family members and school staff.

It is not unusual for a student with a brain injury to demonstrate performance on cognitive measures within a broad percentile range, sometimes to an extreme degree during the first few weeks and months following the injury. This large variability may indicate that certain areas of learning may be more intact than others and/or will be easier for the student, as compared to other areas of performance that are more difficult and challenging. This variability may not appear to be sensible or logical, given what we know about the normal development of academic skills.

This variation can also be influenced by the status of executive functioning, which has a greater role during adolescence and later teen years. These students often are misjudged as appearing unmotivated, disinterested, or not working up to their potential.

Unevenness in the cognitive and behavioral learning profiles are often revealed on testing performed by school personnel, but not be detected or correlated with TBI, particularly if the TBI is undiagnosed. In addition to scrutinizing overall scores, evaluation teams must also look closely at

all subtest scores to determine the degree of scatter, and relevance to the student's learning profile and areas of need.

Performance indicators of uneven cognitive abilities may include:

- ❖ Success in some school subjects, while failing or performing poorly in others
- ❖ Good performance on tests, but poor performance on homework or class work (or the opposite)
- ❖ Inconsistent classroom participation across days
- ❖ Student seems involved, motivated, and performs well in one class, but not in another
- ❖ Teachers have conflicting viewpoints about a student's abilities
- ❖ Lack of "common sense" or failure to generalize
- ❖ Student is not succeeding at a level commensurate with his/her ability scores

Choosing the Correct Tools

There are a variety of school evaluation tools available that are helpful in identifying educational needs of the student with a TBI. The student's individual characteristics of age, current functioning, attention, and recovery phase must be considered when selecting evaluation tools. An evaluation of school performance may include intellectual or ability tests, which measure cognitive abilities, and are most often conducted by school psychologists in the school setting. Achievement tests, which measure a student's academic performance, and school function assessments, which assess a student's ability to adapt and adequately function in typical environments, are most often conducted by special education teachers and/or related services personnel. Adaptive behavior scales can be completed by school psychologists or special educators. *A list of commonly used tools that address all domains of performance can be found at the end of this section.*

Intellectual and Standardized Achievement Tools

These tools are designed to primarily measure cognitive, academic and communication skills. Although information gleaned from these types of evaluations can be useful in certain situations, caution is recommended when interpreting standardized intellectual or achievement test results for a student with TBI. Research has shown that some limitations include:

- ❖ A lack of sensitivity to subtle deficit areas typically seen with TBI in the early stages of recovery, such as memory, processing speed, and attention
- ❖ Processing and reasoning skills are not closely measured
- ❖ Test scores may be inflated due to previous learning
- ❖ Results may mask current deficits related to the TBI
- ❖ Scores may not be a good predictor of future performance
- ❖ Test scores may improve even as student behavior worsens

Many traditional psychometric tools measure the student's preserved abilities (knowledge acquired prior to the injury.) Although this information may be helpful in establishing a 'snapshot' of the student's current abilities, it may overestimate achievement scores, and not necessarily reflect subtle cognitive impairments resulting from a brain injury. Or it may underestimate abilities if evaluated too soon after the injury. Rather than focusing on scaled scores, the student's ability to carry out day-to-day academic and functional tasks in the classroom and educational environment should be the primary focus of the evaluation, particularly during the early stages of recovery.

An Example:

Students with TBI often have chronic and subtle deficits in:

- ❖ Naming and word retrieval
- ❖ Verbal organization
- ❖ Comprehension of rapidly presented or large amounts of verbal information
- ❖ Comprehension of verbal abstractions
- ❖ Effective conversation

On a reading achievement test, a student may perform at grade level, even though he/she has a cognitive deficit which impacts ability to comprehend large amounts of detailed information. The result can be that the reading achievement test score may not be a reliable predictor of actual student performance. The deficits outlined above may be underestimated or go undetected in many traditional testing situations.

Optimal Testing Conditions

The nature of the test instrument or the design of the testing situation can limit usefulness of evaluation data. Achievement test scores are often inflated estimates of the student's ability to function in the regular classroom. Most evaluations provide estimates of optimal, rather than typical levels of performance.

Optimal test results are obtained when the following conditions are present:

- ❖ environment is free from distractions
- ❖ short tests are given in brief sessions

Optimal Conditions, *continued*

- ❖ clear instructions and examples are used
- ❖ highly structured tasks are assessed
- ❖ examiner has an encouraging style
- ❖ frequent breaks are provided

Due in part to testing conditions, formal testing may mask post-traumatic cognitive deficits. Pressures on the student for quantity and rate are often reduced in the test setting. Generalization of skills or concepts to new settings is rarely assessed. Even under ideal assessment conditions, it is difficult to know how well a student will be able to perform outside the testing situation. Simulated real-life stressors during some parts of testing can provide information on how well the student performs under time and performance pressures, environmental distractions, and peer pressure.

Modifying Standardized Tests

It is recommended that the evaluator examine abilities and deficits below basal and above ceiling levels on standardized tests. It may also be helpful to use standardized tests to determine cognitive or processing areas which have a particular effect on the student's performance. Once the standardized test has been administered to the student for norm referenced comparisons, the administration of the test can be modified to identify cognitive areas which may affect performance. For example, a section of the test may be shortened or additional time may be given.

Other possible modifications to standardized tests that measure cognition include the following:

- ❖ Allow student to use different response modes (say out loud or point to response instead of writing)
- ❖ Change directions and content of test items (shorten responses or number of items, more concrete, present orally or in writing)
- ❖ Provide examples
- ❖ Provide multiple choice responses instead of open answer
- ❖ Enlarge print

It is important that all modifications of standardized tests be documented to avoid misinterpretation of the student's abilities. For students who qualify for special education services, testing modifications should be documented in the student's IEP.

Functional Evaluation Tools & Methods

As mentioned above, schools traditionally use standardized norm-referenced tests when conducting evaluations to determine qualification for special education services. However, when evaluating students with moderate or severe TBI, maintaining validity and reliability of test scores can often be challenging due to slowed motor and/or processing responses, augmentative/alternative communication devices, accompanying sensory impairments, behavioral challenges, etc. Modifying standardized, norm-referenced tools and accompanying protocols can be an option, but teams must always document such changes in the evaluation report, and be extremely cautious when interpreting test scores.

An alternative to standardized tools are functional evaluation tools, and can include such activities as student observations, interviews, and review of the student's educational history.

Assessment of everyday competencies utilizing school function tools, while often neglected, may be valuable for determining level of functioning at a given point of time in a student's recovery.

Such evaluation methods are considered functional in that they are specifically designed to evaluate a student's performance in functional daily settings, and often include interviews and observations addressing the areas of organization, study skills, work completion, memory, attention, communication skills, behavior, and motor skills. Data derived from functional evaluations may also be particularly useful in defining a student profile of strengths and needs, and in identifying subtle factors that have an impact on educational programming.

An additional consideration is that a student with TBI may require more frequent evaluation over a shorter period of time during the recovery. Frequently repeated standardized testing is typically not recommended; informal evaluation utilizing a variety of functional tools may offer a more acceptable and accurate alternative in measuring student progress.

Informal Evaluation

An informal evaluation process can complement a standardized evaluation for some domain areas, and result in more meaningful results by providing the team with a set of acceptable informal techniques. It can also be used outside the traditional evaluation/re-evaluation schedule, and create more frequent opportunities for collecting data and measuring student progress.

Role of an informal evaluation

- ❖ Confirm or dispute information obtained from other formal evaluation measures
- ❖ Collect data not addressed or available with other formal assessment measures
- ❖ Obtain informal information on how the student functions in various settings

An informal evaluation can include:

- ❖ Review of the student's cumulative school records
- ❖ Systematic observations
- ❖ Parent, teacher and/or student interviews
- ❖ Student portfolio compiled by the student, teacher or other team members that demonstrate progress over time
- ❖ Objective staff comments and observations
- ❖ IEP periodic review statements

An informal evaluation can also include information that is collected from a variety of sources and data collection tools, such as:

- ❖ The number of times classwork/homework is turned in and completed in a timely manner
- ❖ Student performance on weekly tests, quizzes, etc.
- ❖ Student performance on curriculum unit tests
- ❖ Student grades on assignments
- ❖ Student report card grades
- ❖ Student work samples

Systematic Observations

A systematic observation occurs in the natural setting of the student, typically in a classroom, and requires the teacher to observe behaviors relative to the student's educational functioning. The collected data requires the teacher to explain how the student's impairment is affecting his/her classroom functioning by quantifying the behavior and providing information on frequency, rate,

and latency in an objective, data-specific reporting format. The purpose may also extend to identifying the student's relative strengths, which can later be considered and integrated into the student's educational program.

WHY are systematic observations conducted?

- ❖ A systematic classroom observation is one of the listed eligibility components in the Minnesota Criterion for Traumatic Brain Injury (MR 3525.1348).
- ❖ Systematic observations provide the team with specific data to assist in educational planning, and supplements norm-referenced tools.
- ❖ The Present Level of Academic and Functional Performance (PLAFP) statements on Individualized Education Plans (IEPs) require the student's educational team to address the student's progress in the general education curriculum. Systematic observations provide data that can be included in these PLAFP statements.

WHEN are systematic observations conducted?

- ❖ For initial and three year reevaluations on students
- ❖ When there are concerns about a student's progress
- ❖ When there are concerns about how much, or to what degree, a student is accessing/learning information presented in an educational setting
- ❖ When the team is concerned about what strategies the student utilizes during breakdowns in learning

WHEN are systematic observations conducted, *continued*

- ❖ When the student's educational team is determining or modifying IEP accommodations or services
- ❖ When a parent or a member of a student's IEP team requests a staff observation to address a specific issue or concern
- ❖ When there are considerations to add, change, or remove a student's current school-based assistive technology
- ❖ When there are concerns about the placement and/or setting of the student

Functional Evaluation Tools Specific to TBI

Checklists and observation tools designed specifically for use with students with TBI include the *TBI Checklist* and the *TBI Observation/Interview Form*. These tools can provide useful information for determining eligibility and for program planning. When conducting interviews or asking others to complete checklists, it is important to include nontraditional team members such as coaches, counselors, hall/lunch/playground supervisors, etc. Templates for the tools listed below can be found by clicking on embedded hyperlinks, or in the Appendices section of this manual.

Traumatic Brain Injury Checklist

The Traumatic Brain Injury Checklist is a tool that can be used to evaluate the student in a variety of areas. Examples of some of the areas in the TBI Checklist include: attending to and maintaining an activity, absorbing and retaining information, organizational and planning skills, impulse control, and other areas. The TBI Checklist can be completed by anyone who is involved with the student with the TBI. This may include teachers, coaches, counselors, parents and the student. It is recommended that more than one person rate a student to identify patterns of behavior that may

be related to certain activities and/or settings. [The TBI Checklist](#) can be found on the MN Low Incidence Projects website, and in the Appendices section of this manual.

When interpreting the findings, an educator who is trained and knowledgeable in TBI, such as a TBI specialist, should carefully review and summarize the information obtained from this checklist. The following steps will assist in evaluating and interpreting the results.

Using the rating scale shown on the first page, the individual completing the checklist responds to each of the items by checking the column which best reflects the student's status. When scoring the results, the numbers are tallied for each category, and a corresponding score and percentage is calculated. Results from one or more raters can be tabulated, either individually or mathematically averaged.

When analyzing the tallied responses for each category, the most points possible (number on the bottom) represents the most severe and frequent occurrences of the behavior. By comparing the student's total points per category to this number and then calculating a percentage, the relative significance of the problem may be determined. A student who receives a score of 40% or more of the possible points may have a significant problem in that particular area depending upon analysis of the behaviors involved. For example, in the first section, *Orientation and Attention to Activity*, the total possible score is 24. If a student receives 10 or more points in this section, this total section score could be considered significant. When utilizing the Checklist during a student observation, consider the classroom or specific environment, the time of day the student was observed, as well as the expectations of the setting and the staff.

Computed percentages can be plotted and displayed on the accompanying graph. This data can be visually presented in a number of ways; a) individual percentages for each category by multiple respondents, or b) averaged percentages. It should be noted that the TBI Checklist (and other checklists included in this manual) are not normed or standardized as evaluation instruments.

TBI Observation/Interview Form

This form may be used as a tool to record information gathered from group interviews and to document observations. It may also be used to compile and summarize information generated from other checklists and/or worksheets. The [TBI Observation/Interview Form](#) can also be found on the MN Low Incidence Projects website and in the Appendices section of this manual.

Interpretation of Evaluation Results

Indicators, trends, and interpreted results derived from observation worksheets, checklists, and other informal measures should be reviewed by the team along with all other formal assessment measures/procedures, and then summarized as part of the total evaluation. Information gathered from individual tools should never be used in isolation from other evaluation tools.

Evaluation results should be carefully interpreted by trained and knowledgeable special education staff, including an educator who is knowledgeable and experienced in the area of TBI. The process of interpretation and summary should be team-based, and within the framework of the actual school setting. Environmental variables that may have influenced test results either positively or negatively should be included. Results of testing should be viewed as a student's present level of functioning and not necessarily as predictors of future performance.

Re-Evaluation

Since recovery from TBI can be sporadic and unpredictable, periodic re-evaluation is important in order to monitor progress, review instructional objectives, and revise programs. Rapid changes in many areas of the student's functioning during the first one to two years following the injury may require more frequent formal and informal evaluations to avoid basing intervention strategies and accommodations on outdated information. Also, behavioral or learning impairments may not

become apparent until years later. With maturity, impairments in complex functions may become more evident. However, over-testing can also result in frustration for the student without significant results. Decisions regarding type and frequency of evaluations must be carefully considered by the team.

Considerations for Evaluating the Very Young Child

There are a number of state resources available on the topic of evaluating the very young child. Issues pertaining to test selection, evaluation procedures, and qualification guidelines are applicable to all young children with special needs, including TBI, including aspects that may impact the validity of test scores and testing procedures. Additional considerations are listed below.

- ❖ Educational staff should be sensitive to the family's current situation and emotional status. The injury has forcefully pushed the family into an unfamiliar world, with many challenges and 'unknowns' ahead of them.
- ❖ Typically, educational services for very young children and their families are provided within the family's home. Be respectful of their schedule and family needs while trying to meet educational guidelines and timelines.
- ❖ As with older children, remember that overall functioning and behavior can change dramatically within the first days, weeks, and months following a TBI. Similarly, recovery can be sporadic and unpredictable.
- ❖ Maintain involvement, ongoing communication and interagency support with the family's medical and therapeutic providers.
- ❖ Follow all guidelines in the MDE Manual: *Evaluation Compendium: A Guide to Comprehensive Evaluation of Young Children Birth to Age Six*.

Remember that very young children:

- ❖ Are sensitive to their surroundings (including new people), and therefore may be easily distracted, fearful, or distressed. They may experience heightened stranger and/or separation anxiety.
- ❖ Are influenced by their comfort level with the assessor, and the proximity of their primary caregiver(s).
- ❖ Should be evaluated in a variety of situations.
- ❖ May have limited communication skills that can interfere with comprehension and/or responses.

Taken from: *Evaluation Compendium: A Guide to Comprehensive Evaluation of Young Children Birth to Age Six*; Minnesota Department of Education. For more information on this and other similar resources, go to: <http://education.state.mn.us/MDE/EdExc/EarlyChildRes/index.html>

Additional Resource: The Minnesota Department of Education has an information sheet entitled, 'Traumatic Brain Injury in Children Birth to Four Years', which can be found on the Minnesota Department of Education's website at www.education.state.mn.us, and in the Appendices section of this manual.

Evaluation Tools to Consider for the Very Young Child (Birth to Five)

Screening

- ❖ Ages & Stages Questionnaire, 3rd Edition (ASQ)
- ❖ Battelle Developmental Inventory Screening Test (BDIST)
- ❖ Bayley Infant Neurodevelopmental Screener (BINS)
- ❖ Brigance Early Childhood Screen II
- ❖ Denver Developmental Screening Test II (DDST-II)
- ❖ Early Screening Inventory (ESI-R)

Intellectual

- ❖ Bayley Scales of Infant Development (BSID II)
- ❖ Bayley Scales of Infant and Toddler Development (Bayley III)
- ❖ Kaufman Assessment Battery for Children (K-ABC:2)
- ❖ McCarthy Scales of Children's Abilities (ages 2 to 8)
- ❖ Stanford-Binet Intelligence Scales (SB-5)
- ❖ Structured Photographic Expressive Language Test (SPELT P2)
- ❖ Wechsler Preschool and Primary Scale of Intelligence (WPPSI-IV)

Pre-Academic/Achievement: Preschool, Age 4+

- ❖ Kaufman Test of Educational Achievement (KTEA II)
- ❖ Wechsler Individual Achievement Test (WIAT-II)

Communication

- ❖ Boehm Test of Basic Concepts- 3 (Preschool)
- ❖ Clinical Evaluation of Language Functions (CELF: Preschool)
- ❖ Expressive One-Word Picture Vocabulary Test
- ❖ Preschool Language Scale (PLS-4)
- ❖ Reynell Developmental Language Scale III-Revised
- ❖ Test of Early Language Development (TELD-3)
- ❖ Test for Examining Expressive Morphology (TEEM)

Motor

- ❖ Battelle Developmental Inventory (BDI-2)
- ❖ Peabody Developmental Motor Scales (PDMS-2)

Emotional, Social, Behavioral & Adaptive

- ❖ Bayley Social-Emotional Adaptive Behavior Questionnaire
- ❖ Achenbach Child Behavior Checklist, Parent Report and Teacher Report, observation form (Preschool)

Evaluation Tools to Consider for Students K-12

The following list includes a selection of evaluation tools which may be considered for use by neuropsychologists, rehabilitation specialists, special education teachers and related services staff. Some of the listed tools may offer specific recommendations regarding the evaluator's professional credentials. This list is not exhaustive and is included for the purpose of providing options rather than specific endorsements. Due to performance variability, observation in a variety of school settings provides an excellent complement to formal evaluation. For an initial evaluation, include a minimum of one or more tools or measures from Group 1 and Group 2 under Part D of the TBI eligibility criteria.

The list is arranged in order of the domains addressed during an evaluation. Tools have been placed under the most appropriate performance area, although there may be duplications under multiple areas.

A special education evaluation of a student with traumatic brain injury may address any of the nine areas. The student's presenting educational needs should indicate which areas require more in-depth evaluation.

Intellectual Domain

Cognition/Intelligence

- ❖ Comprehensive Test of Nonverbal Intelligence (CTONI 2)
- ❖ Detroit Test of Learning Aptitude (DTLA-P:3)
- ❖ Differential Ability Scales (DAS II)
- ❖ Kaufman Assessment Battery for Children (K-ABC:2)

Cognition/Intelligence, *continued*

- ❖ Stanford-Binet Intelligence Scales (SB-5)
- ❖ Universal Nonverbal Intelligence Test (UNIT)
- ❖ Wechsler Intelligence Scale for Children (WISC IV)
- ❖ Wechsler Adult Intelligence Scale (WAIS IV)
- ❖ Woodcock-Johnson Tests of Cognitive Abilities (WJ III)

Nonverbal Problem-Solving and Abstract Reasoning

- ❖ Columbia Mental Maturity Scale (CMMS- third edition)
- ❖ Test of Problem Solving 2 (TOPS 2: Adolescent)
- ❖ Test of Problem Solving 3 (TOPS 3: Elementary)
- ❖ Test of Nonverbal Intelligence (TONI-4)
- ❖ Wisconsin Card Sorting Test (WCST)

Visual/Perceptual Motor Tasks

- ❖ Bender Visual Motor Gestalt Test (Bender Gestalt II)
- ❖ Developmental Test of Visual Motor Integration (Beery VMI- 6th edition)
- ❖ Hooper Visual Organization Test (VOT)
- ❖ Motor-Free Visual Perception Test (MVPT-3)
- ❖ Test of Visual Perceptual Skills (Gardner TVMS-R)

Attention and Impulse Control

- ❖ Attention Deficit Disorders Evaluation Scale (ADDES-3)
- ❖ Behavior Assessment System for Children (BASC-2)
- ❖ Behavior Rating Inventory of Executive Function (BRIEF)
- ❖ Connors Rating Scale (CRS-R; 3rd edition)
- ❖ Detroit Test of Learning Aptitude (DTLA-4; and DTLA-P:3)

Memory and New Learning

- ❖ Children's Memory Scale (CMS)
- ❖ California Verbal Learning Test (CVLT-C)
- ❖ Kaufman Assessment Battery for Children II, McCarthy Scales of Children's Abilities, and Wechsler Scales: Select subtests
- ❖ Learning Efficiency Test (LET II)
- ❖ Test of Memory and Learning (TOMAL-2)
- ❖ Wide Range Assessment of Memory and Learning-2 (WRAML-2)

Academic Domain

- ❖ Gates-MacGinitie Reading Test (GMRT- 4th edition)
- ❖ Gray Oral Reading Test (GORT- 5)
- ❖ Kaufman Test of Educational Achievement (KTEA II)
- ❖ KeyMath3 Diagnostic Assessment

(Academic Domain, *continued*)

- ❖ Peabody Individual Achievement Test (PIAT-R/NU)
- ❖ Stanford Diagnostic Reading Test (SDRT 4)
- ❖ Wechsler Individual Achievement Test (WIAT-II)
- ❖ Wide Range Achievement Test (WRAT4)
- ❖ Woodcock Johnson III Tests of Achievement (WJ III)

Communication Domain

- ❖ Arizona Articulation Proficiency Scale (Arizona-3)
- ❖ Assessing Semantic Skills through Everyday Themes (ASSET)
- ❖ Auditory Processing Abilities Test (APAT)
- ❖ Boehm Test of Basic Concepts (Boehm-3)
- ❖ Clinical Evaluation of Language Fundamentals (CELF-5)
- ❖ Comprehensive Assessment of Spoken Language (CASL)
- ❖ Expressive One-Word Picture Vocabulary Test (EOWPVT-4)
- ❖ Receptive One-Word Picture Vocabulary Test (ROWPVT-4)
- ❖ Let's Talk Inventory for Children (also adolescent version)
- ❖ Listening Comprehension Test (LCT-2; also adolescent version)
- ❖ Peabody Picture Vocabulary Test (PPVT-4)
- ❖ Social Language Development Test (Elementary & Adolescent versions)

(Communication Domain, *continued*)

- ❖ Structured Photographic Expressive Language Test (SPELT-3)
- ❖ Test of Adolescent Language (TOAL-4)
- ❖ Test of Auditory Comprehension of Language (TACL-3)
- ❖ Test for Examining Expressive Morphology (TEEM)
- ❖ Test of information Processing Scale (TIPS)
- ❖ Test of Language Competence (TLC- Expanded)
- ❖ Test of Language Development (Primary, Intermediate: TOLD 4)
- ❖ Test of Narrative Language (TNL)
- ❖ Test of Pragmatic Language (TOPL-2)
- ❖ Test of Word Finding (TAWF-2) (also an adolescent version)
- ❖ Test of Written Language (TOWL-4)
- ❖ WORD Test 2 (Elementary & Adolescent)

Fine Motor Domain

- ❖ Bruininks-Oseretsky Test of Motor Proficiency (BOT-2)
- ❖ Developmental Test of Visual Motor Integration (Beery VMI- 6th edition)
- ❖ Fine Motor/Hand Function and Handwriting Evaluation (informal measure)
- ❖ School Function Assessment (SFA)
- ❖ Test of Visual Perceptual Skills (Gardner TVMS-R)

Gross Motor Domain

- ❖ Balance Testing (informal measure)
- ❖ Bruininks-Oseretsky Test of Motor Proficiency (BOT-2)
- ❖ Functional Gait Analysis (informal measure)
- ❖ School Function Assessment (SFA)

Sensory Domain

Auditory

- ❖ Speech-Sounds Perception Test
- ❖ Woodcock-Fristoe-Johnson Test of Auditory Discrimination

Vision/Hearing Screening

- ❖ Obtain current vision and hearing information from the school nurse, other medical personnel or through records

Health/Physical Domain

- ❖ Review medical records, health history, and current health status

Emotional, Social & Behavioral Domains

- ❖ Achenbach Child Behavior Checklist (Parent & Teacher Reports; observation form)
- ❖ Adaptive Behavior Evaluation Scale (ABES-2)
- ❖ Minnesota Multiphasic Personality Inventory (MMPI-2)
- ❖ Personality Inventory for Children: Parent Report (PIC-2)
- ❖ Personality Inventory for Youth (PIY)
- ❖ Piers-Harris Children's Self-Concept Scale (Piers-Harris-2)
- ❖ Scales of Independent Behavior (SIB-R)

Functional Domain

- ❖ AAMD Adaptive Behavior Scale (AAMD ABS-2)
- ❖ School Function Assessment (SFA)
- ❖ TBI Checklist
- ❖ TBI Observation/Interview Form
- ❖ Tests for Everyday Living (TEL)
- ❖ Vineland Scales of Adaptive Behavior (Vineland II)

Vocational, Occupational, and Secondary Transition Domains

- ❖ Becker Work Adjustment Profile
- ❖ BRIGANCE Employability Skills Inventory or BRIGANCE Transition Skills Inventory
- ❖ Checklist of Adaptive Living Skills (CALs)
- ❖ Enderle-Severson Transition Rating Scale
- ❖ Interest Determination, Exploration, and Assessment System (IDEAS)
- ❖ Inventory for Client and Agency Plan (ICAP)
- ❖ My Next Move (O*Net Interest Profiler)
- ❖ Quality of Life Questionnaire (QOL.Q)
- ❖ Quality of Student Life Questionnaire (QSL.Q)
- ❖ Reading-Free Vocational Interest Inventory (R-FVII:2)
- ❖ Responsibility and Independence Scale for Adolescents (RISA)
- ❖ Social and Prevocational Information Battery-Revised (SPIB-R)
- ❖ Tests for Everyday Living (TEL)
- ❖ Transition Planning Inventory (TPI-UV)
- ❖ Work Adjustment Scale (WAS)
- ❖ Work Readiness Inventory (WRI)

KEY FACTS: Part 5

- ❖ Pre-referral intervention procedures are not required in cases where a medically documented TBI has recently occurred and there is concern regarding changed educational performance.
- ❖ A thorough evaluation should be conducted as soon as the student is able to participate, and should include a review of available medical information, a summary of the student's past educational performance, and current academic needs.
- ❖ Traditional standardized tools to measure IQ or achievement may not always detect deficit areas often seen with TBI, particularly those associated with frontal lobe injuries. Evaluation tools and methods should be carefully chosen, based on the student's age, type of injury, rate of recovery, and presenting needs.
- ❖ To glean the most useful information, the evaluator may need to modify a standardized test (and should document the modification in the evaluation report for purposes of clarification). This may be helpful in determining concept understanding and optimal response modes.
- ❖ Test data and other relevant information from the medical community (such as a neuropsychological evaluation) can often be of significant value to the student's educational evaluation and programming, and should be referenced in the evaluation report.
- ❖ Informal evaluation measures can often be as (or more) important than standardized measures, and can include systematic observations, interviews, review of collected data, and file review.

Key Facts: Part 5, continued

- ❖ In the case of the very young child, traumatic pathology resulting from a TBI is significantly different when compared to older children or adults. They are more likely to sustain a TBI than most other age groups; and significant injury will often result in chronic, lifelong deficits that will require a high degree of family and community support services.

Part 6

Minnesota Administrative Rules: Traumatic Brain Injury

3525.1348 TRAUMATIC BRAIN INJURY (TBI)

Definition

Criteria

3525.1348 TRAUMATIC BRAIN INJURY (TBI)

Subpart 1. Definition.

"Traumatic brain injury" means an acquired injury to the brain caused by an external physical force, resulting in total or partial functional disability or psychosocial impairment, or both, that may adversely affect a pupil's educational performance and may result in the need for special education and related services. The term applies to open or closed head injuries resulting in impairments in one or more areas, such as: cognition, speech/language, memory, attention, reasoning, abstract thinking, judgment, problem-solving, sensory, perceptual and motor abilities, psychosocial behavior, physical functions, and information processing. The term does not apply to brain injuries that are congenital or degenerative, or brain injuries induced by birth trauma.

Subpart 2. Criteria.

The team shall determine that a pupil is eligible and in need of special education and related services if the pupil meets the criterion in item A and the criteria in items B and C as documented by the information gathered according to item D:

- A. There is documentation by a physician of a medically verified traumatic brain injury.
- B. There is a functional impairment attributable to the traumatic brain injury that adversely affects educational performance in one or more of the following areas: intellectual-cognitive, academic, communication, motor, sensory, social-emotional-behavioral, and functional skills-adaptive behavior. Examples of functional impairments which may adversely affect educational performance are:
(continued on next page)

(1) Intellectual-cognitive, for example, impaired:

- (a) attention or concentration;
- (b) ability to initiate, organize or complete tasks;
- (c) ability to sequence, generalize or plan;
- (d) insight/consequential thinking;
- (e) flexibility in thinking, reasoning, or problem-solving;
- (f) abstract thinking;
- (g) judgment or perception;
- (h) long-term or short-term memory;
- (l) ability to acquire or retain new information;
- (j) ability to process information;

(2) Academic, for example:

- (a) marked decline in achievement from pre-injury levels;
- (b) impaired ability to acquire basic skills (reading, written language, mathematics);
- (c) normal sequence of skill acquisition which has been interrupted by the trauma as related to chronological and developmental age;

(3) Communication, for example:

- (a) impaired ability to initiate, maintain, restructure, or terminate conversation;
- (b) impaired ability to respond to verbal communication in a timely, accurate or efficient manner;
- (c) impaired ability to communicate in distracting or stressful environments;
- (d) impaired ability to use language appropriately (requesting information, predicting, analyzing, or using humor);
- (e) impaired ability to use appropriate syntax;
- (f) impaired abstract or figurative language;
- (g) perseverative speech (repetition of words, phrases, or topics);
- (h) impaired ability to understand verbal information;
- (i) impaired ability to discriminate relevant from irrelevant information;
- (j) impaired voice production/articulation (intensity, pitch, quality, apraxia, or dysarthria);

(4) Motor, for example, impaired:

- (a) mobility (balance, strength, muscle tone, or equilibrium);
- (b) fine or gross motor skills;
- (c) speed of processing or motor response time;
- (d) sensory, for example, impaired;

(5) sensory, for example, impaired:

(a) vision (tracking, blind spots, visual field cuts, blurred vision, or double vision);

(b) hearing (tinnitus, noise sensitivity, or hearing loss);

(6) Social-emotional-behavioral, for example:

(a) impaired ability to initiate or sustain appropriate peer or adult relationships;

(b) impaired ability to perceive, evaluate, or use social cues or context appropriately;

(c) impaired ability to cope with over-stimulating environments, low frustration tolerance;

(d) mood swings or emotional ability;

(e) impaired ability to establish or maintain self-esteem;

(f) denial of deficits affecting performance;

(g) poor emotional adjustment to injury (depression, anger, withdrawal, or dependence);

(h) impaired ability to demonstrate age-appropriate behavior;

(i) impaired self-control (verbal or physical aggression, impulsivity, or disinhibition);

(j) intensification of pre-existent maladaptive behaviors or disabilities;

(7) functional skills-adaptive behavior, for example, impaired:

(a) ability to perform developmentally appropriate daily living skills in school, home, leisure, or community setting (hygiene, toileting, dressing, eating);

(b) ability to transfer skills from one setting to another;

(c) orientation (places, time, situations);

(d) ability to find rooms, buildings, or locations in a familiar environment;

(e) ability to respond to environmental cues (bells, signs);

(f) ability to follow a routine;

(g) ability to accept change in an established routine;

(h) stamina that results in chronic fatigue.

C. Information/data to document a functional impairment in one or more of the areas in item B must, at a minimum, include one source from Group One and one source from Group Two:

(1) GROUP ONE:

(a) checklists;

(b) classroom or work samples;

(c) educational/medical history;

(d) documented, systematic behavioral observations;

(e) interviews with parents, student, and other knowledgeable individuals;

(2) GROUP TWO:

(a) criterion-referenced measures;

(b) personality or projective measures;

(c) sociometric measures;

(d) standardized assessment measures; (academic, cognitive, communication, neuropsychological, or motor).

Statutory Authority:

MS s [121.11](#); L 1994 c 647 art 3 s 23; L 1999 c 123 s 19,20

History:

19 SR 2432; L 1998 c 397 art 11 s 3; [26 SR 657](#); L 2005 c 56 s

Part 7

Eligibility

Considerations for Determining Eligibility

TBI Criteria Checklist

Acquired Brain Injury

Congenital Brain Injury

Considerations for TBI Eligibility

Medical Documentation

Indicators of Need

Comparing TBI to Other Categories

Key Facts

Considerations for Determining Eligibility

Minnesota Rule defines traumatic brain Injury as ‘an acquired injury to the brain caused by an external physical force, resulting in total or partial functional disability or psychosocial impairment, or both, that may adversely affect a pupil's educational performance and may result in the need for special education and related services. This legal definition further states that the educational definition of TBI does *not* apply to brain injuries that are acquired (non-traumatic), congenital or degenerative, or induced by birth trauma. For more information on these types of injuries, see sections entitled ‘Acquired Brain Injury’ and ‘Congenital Brain Injury’.

Minnesota Criteria states that there must be documentation by a physician of a medically verified traumatic brain injury in order to qualify under the category of TBI. When the medical documentation is questionable or non-existent, there are options the educational team may want to consider if they feel that the evaluation results support a learner profile of a student with TBI. To read more on this topic, see the section entitled, ‘Medical Documentation’ on the following pages.

The Minnesota Criteria further states that there must be a functional impairment attributable to the TBI that adversely affects educational performance in one or more listed areas of learning. A comprehensive educational evaluation should assist the team in establishing which, if any, areas are impacted by the TBI, and to what extent. The team is then charged with developing an Individualized Education Plan (IEP) which clearly identifies the student's strengths, needs, goals and related objectives, adaptations, and services. More information on developing an IEP can be found in Part 8: Designing an Educational Program.

TBI Criteria Checklist

The Minnesota Department of Education has developed customized criteria checklists for each of the thirteen special education categories. The TBI Criteria Checklist can be found in the Appendices. This tool may be helpful to teams in providing a systematic way of documenting which components of the criteria have been met, and the decision that was made with regard to eligibility determination.

Acquired Brain Injury

An acquired brain injury (ABI) is non-traumatic in nature, occurs after birth, and does *not* align with federal and state definitions of TBI. Common causes of ABI include certain medical conditions which affect the supply of blood or oxygen to the brain, or a change in the brain tissues or structures. Examples of such conditions include anoxia, tumor, encephalitis, meningitis, stroke, and aneurysm. In addition, cranial or central nervous system radiation for cancers such as leukemia or brain tumors may also cause injury to the developing brain. Although these conditions may result in a learner profile that would be similar to a student with a TBI, the student would not meet eligibility requirements under the category of TBI in the state of Minnesota.

When a student has a medical diagnosis that would be considered an ABI and results in educational needs, the evaluation team will need to carefully consider which special education category would best address those needs, and determine if the student is eligible for services based on the criteria for that particular category.

If it is determined that the student is *not* eligible for special education services under the IDEA and Minnesota state criteria, the team may choose to consider eligibility under Section 504 of the Rehabilitation Act if the student has a 'physical or mental impairment which substantially limits a major life activity'. For more information on Section 504 of the Rehabilitation Act of 1973, please

refer to Part 2: Overview of School Services; or refer to the Compliance Manual for Section 504 Rehabilitation Act of 1973, found on the Minnesota Department of Education's website.

Congenital Brain Injury

Congenital brain injuries result from a variety of medical conditions and are present at birth. This can include cerebral palsy, a wide array of genetic or chromosome disorders or syndromes, complications from prematurity, etc. Although congenital brain injuries often result in impaired brain function, the student would not meet eligibility under the category of TBI in the state of Minnesota.

As with ABI, the educational team should consider eligibility under other special education categories that would best address the student's needs.

The chart on the accompanying page provides a framework for eligibility when considering the category of TBI and other categorical areas, based on the presenting medically diagnosed condition.

Considerations for TBI Eligibility

**DOES meet
MN Definition of TBI**

Traumatic Brain Injury

Caused By:

- ❖ External Physical Force
- ❖ Motor Vehicle Crashes
- ❖ Falls
- ❖ Bicycle Injuries
- ❖ Recreational Vehicle Crashes
- ❖ Child Abuse
- ❖ Brain Surgery

**Does NOT meet
MN Definition
of TBI**

Congenital Brain Injury

- ❖ Occurs at birth

Caused By:

- ❖ Cerebral Palsy
- ❖ Genetic disorders or syndromes
- ❖ Chromosome Disorders

Consider other Categories

Acquired Brain Injury

- ❖ Non-traumatic
- ❖ Occurs after birth

Caused By:

- ❖ Anoxic Injury
- ❖ Infection
- ❖ Stroke
- ❖ Toxins
- ❖ Tumors
- ❖ Near Drowning

Consider other Categories

Medical Documentation

Before a student can be considered for eligibility under the category of TBI, there must be signed documentation of the TBI by a physician, which is then kept in the student's school file (electronic signature acceptable). A form entitled, 'Medical Documentation Form' is included in the appendix, and is a useful documentation tool for physicians when communicating with school staff. Other acceptable forms of signed medical documentation include a letter or physician's note, or discharge summary. Documentation must come from a medical doctor; diagnoses from neuropsychologists and nurse practitioners would not meet eligibility criteria.

Medical information is also helpful in identifying ongoing health issues and planning for related accommodations. For example: Identifying the degree of trauma from a medical perspective, identifying the location and extent of lesions, age at the time of the injury, length of the hospitalization, continuing medical concerns, current medications and potential side effects, etc.

In addition to general medical information, the effects of medication administered to the student and their potential side effects must also be considered in the evaluation process.

Lack of Documentation

On occasion, a family may not have the necessary medical documentation at the time of the evaluation. This may be the result of only having anecdotal evidence (e.g., parent report) of a long-past injury that was never formally diagnosed by a physician. Another possible situation may involve a family who has few or no medical records, has a history of emotional or physical trauma, or who are hesitant to request support from community or government agencies.

When such situations occur, it is recommended that the school team work closely with the family to obtain the necessary medical documentation if there is justification for considering qualification

under the category of TBI. The TBI specialist or other designated school staff can assist the family by linking them to county Human Services intake personnel or area medical clinics. Some clinics provide free medical services and/or a sliding fee payment option. The family and school staff should also work together to provide the physician with supporting evidence that would suggest the presence of a TBI, such as observation notes, classroom data, information from previous evaluations, and other anecdotal evidence. A physician may also consider making a referral for a neuropsychological evaluation to further clarify learning and emotional/behavioral needs.

Team Override NOT an Option

Minnesota Rule stipulates that students must meet all required components of the Minnesota Criteria, including the requirement for medical documentation. A team override- a process that allows the team to qualify the student for special education services under special circumstances even though not all criteria have been met- is *not* acceptable in cases where medical documentation is required. A lack of medical documentation can prevent a student from qualifying for and receiving services under the TBI category.

Fiscal Responsibility

Educational teams should also be aware of the following, as noted in the Minnesota Department of Education's Compliance Manual for Section 504 (revised April 2011):

“A district is obligated to conduct an evaluation of a student, including a medical assessment, if necessary, at NO cost to the parents if the district suspects that the student has a disability that would result in Section 504 eligibility...” (Including special education services).

Indicators of Need

To meet Minnesota eligibility criteria for TBI, a student must demonstrate *a functional impairment attributable to the traumatic brain injury that adversely affects educational performance* in one or more of the nine domains listed below. Listed under each area are some indicators of functional impairments that may result from a traumatic brain injury. A functional impairment is defined as an inability to function in activities and/or complete tasks in what would be considered typical age/grade level educational setting(s).

Intellectual/Cognitive Functioning Indicators:

- ❖ Distractibility, poor concentration, and poor impulse control or inhibition
- ❖ Poor memory affecting encoding, retention, and retrieval of information
- ❖ Visual-spatial problems affecting part-whole reasoning, integration, and synthesis
- ❖ Impaired judgment, conceptual reasoning, and organizational skills
- ❖ Slowed processing speed and/or slowed output of information affecting performance in timed tests

Academic Performance Indicators:

- ❖ Impaired word recognition (dyslexia) or reading comprehension
- ❖ Confusion with math calculations, especially applications (dyscalculia)
- ❖ Poor retention of facts in content subjects, such as history and science
- ❖ Errors in mechanics and fluent expression of written language (dysgraphia)

- ❖ Difficulty integrating and applying new information

Communication Status Indicators:

- ❖ Oral motor dysfunction affecting articulation or swallowing
- ❖ Comprehension problems or inefficiently processing language
- ❖ Dysfluent speech or problems retrieving words from memory
- ❖ Pragmatic language deficits in conversation, turn-taking, and social rules

Motor Ability Indicators:

Gross Motor

- ❖ Extreme weakness (paresis) or total paralysis of one or both sides
- ❖ Reduced muscle tone (hypotonia) or rigidity
- ❖ Muscle contractions or spasticity
- ❖ Poor balance or ataxia

Fine Motor

- ❖ Reduced motor dexterity and tremors impairing cutting, drawing, or writing skills
- ❖ Problems with motor planning (dyspraxia) impairing dressing or assembly skills
- ❖ Problems with written output (dysgraphia) affecting written communication

Sensory Status Indicators:

Hearing

- ❖ Partial or total hearing loss in one or both ears
- ❖ Difficulty understanding spoken language in a noisy environment
- ❖ Development of a 'ringing sound' (tinnitus)
- ❖ Sensitivity to sound

Vision

- ❖ Partial or total vision loss, or visual field cuts (blind spots or areas)
- ❖ Impaired visual tracking (affecting reading, writing, driving, etc.)
- ❖ Visual blurring or double vision (diplopia)
- ❖ Sensitivity to light

Other

- ❖ Heightened or diminished sensitivity to sound, light, smells, tastes, tactile sensations

Social/Emotional Development and Behavioral Indicators:

- ❖ Agitated, depressed, anxious, or labile behaviors
- ❖ Immature, insensitive, or inappropriate behaviors
- ❖ Poor or unrealistic perceptions of self or abilities
- ❖ Low frustration tolerance and/or persistence

Functional Skills Indicators:

- ❖ Problems in self-care (e.g., dressing, hygiene, feeding)
- ❖ Inability to work independently
- ❖ Inability to generalize information from one setting to another
- ❖ Problems orienting to time and place
- ❖ Difficulties with transitions or changes in routine

In addition, the educational team should consider the following indicators which align with MN special education evaluation standards:

Health/Physical Status Indicators (secondary to TBI):

- ❖ Physical limitations (e.g., physical activity restrictions, fatigue)
- ❖ Medical problems (e.g., seizures, motor spasticity, headaches, pain, dizziness or vertigo)
- ❖ Medication needs (e.g., anticonvulsant, antidepressant, psycho-stimulant medications)
- ❖ Need for assistive devices (e.g., wheelchair, positioning equipment, assistive technology)

Transition Areas:

Postsecondary Education and Training

- ❖ Unrealistic goal setting
- ❖ Lack of awareness of post-secondary options
- ❖ Impaired self-advocacy skills and awareness of needs/accommodations

Employment

- ❖ Limited occupational interests
- ❖ Behavior/attitude interfering with employment
- ❖ Limited job seeking or interview skills

Community Participation

- ❖ Problems accessing reliable transportation
- ❖ Limited knowledge of legal rights
- ❖ Limited knowledge and access to community services

Leisure and Home Living

- ❖ Difficulties with money management, completing forms, understanding contractual agreements
- ❖ Difficulties with medical management (e.g., self-administration of medication, making doctor appointments)
- ❖ Difficulties with locating housing, maintaining a home (e.g., cleaning, repairs)

Recreation

- ❖ Limited knowledge and access to recreation options in the community

Comparing TBI to Other Categories

Although students with a traumatic brain injury may appear to have similar deficits when compared to other students with disabilities, they in fact have unique learning styles and educational requirements. The student's needs are best addressed under the TBI category. Some unique differences seen with traumatic brain injury and some implications for their educational programming are outlined on the following pages.

Developmental Cognitive Disabilities (DCD)

Students with moderate or severe brain injury may score in the significantly sub-average intellectual functioning range on standardized tests but typically have an uneven cognitive profile. They may also demonstrate unique sensory, motor, and learning problems.

TBI and DCD:

❖ Similarities

- Moderate to severe TBI may yield significantly low IQ scores
- Diminished abilities in academic and functional skill areas

❖ Differences: Students with TBI typically...

- Have an uneven cognitive profile
- Demonstrate unique sensory, motor, and learning problems
- Follow erratic cognitive progress
- Show early gains, but may display later learning problems

Specific Learning Disabilities (SLD)

Many students with brain injury score within normal limits on tests of intelligence but show uneven cognitive skills resembling students with specific learning disabilities. Both types of students may benefit from similar teaching strategies: task analysis, multi-sensory teaching, compensatory strategies, teaching to strengths, and an emphasis on meta-cognition. However, students with brain injury are distinguished by their ability to retain information or quickly regain skills learned *before* the injury, but are impaired in their ability to learn *new* information. Their learning profile is not only varied but can contain large gaps. For example, the student with TBI may quickly reacquire basic reading or math skills learned prior to injury but may struggle to retain new information.

TBI and SLD:

❖ Similarities

- May score within normal limits (IQ) but show uneven cognitive skills
- Benefit from similar teaching strategies

❖ Differences

- Students with TBI may regain pre-injury information and skills quickly, but have difficulty learning and retaining new information

Emotional or Behavioral Disorders (EBD)

Students with TBI may display depression, anger, anxiety, social withdrawal, severe mood swings, emotional dysregulation, and other symptoms characteristic of some children with emotional or behavioral disorders. Damage to the areas of the brain involved with emotions is coupled with the student's reaction to his/her diminished skills, and may intensify emotional reactions.

TBI and EBD:

❖ Similarities

- Depression, anxiety, social withdrawal, severe mood swings, etc.
- Emotional centers of the brain can be affected

❖ Differences

- Causes and management of challenging behaviors are distinctly different
- With TBI, reaction to diminished skills may intensify emotional reactivity

Developmental Delay (DD)

Unlike children who experience developmental delay during the early childhood years, students with TBI may show erratic cognitive progression following a diagnosis. In the early months following a brain injury, a young child may experience confusion, disorientation, and limited control that is atypical of students who are developmentally delayed. Many students show striking gains in the first several years following an injury, only to "grow into" learning problems during later stages of development.

TBI and DD:

❖ Similarities

- May appear to have deficits across domains

❖ Differences

- Rate of progression tends to be stable and consistent with DD; more erratic and uneven profile with TBI

Other Health Disabilities (OHD)

Students with Other Health Disabilities may have such diagnoses as stroke, ADHD, cancer, a cardiovascular condition, respiratory disorder, immune deficiency disorder, etc. Physical concerns may include limited physical strength and/or endurance, absenteeism due to chronic symptoms, specialized health care procedures, etc. Students with TBI may have many of the same physical symptoms to contend with during the first weeks and months following a TBI, but symptoms often stabilize over the long term.

Students with ADHD in particular have difficulties with impulsive and/or inattentive behaviors, heightened or diminished alertness, inability to manage or organize materials or complete tasks, etc. These areas of need are often shared by students with TBI. In addition, consistent memory problems and decreased initiative may impair their ability to learn strategies. The student with TBI may also be unresponsive to many cues, cognitive strategies, and insight-oriented approaches that may prove useful for the student with a health disability and/or ADHD.

Following a brain injury, a student with TBI may appear as he/she was prior to the injury; however, there may be changes not readily apparent to others. Parents may be reluctant to accept the permanent nature of the disability and may attribute problems to pre-injury personality (e.g. "He always had a bad temper."). Teachers may also blame a student's reduced initiative and attention on 'laziness', 'poor motivation', or 'special treatment in the hospital'. In fact, these behaviors are often characteristic of a student with an injury to the frontal lobe of the brain.

TBI and OHD:

❖ Similarities

- May report impulsive, inattentive behavior; diminished awareness
- May have limited strength and endurance
- May have excessive absenteeism and specialized health procedures
- May have trouble organizing, prioritizing and completing tasks

❖ Differences

Students with TBI:

- May respond differently to cues and strategies
- May have health care needs that subside or decrease over time
- May report reduced energy, memory problems, decreased initiative
- May be less responsive to cues and insight-oriented strategies

KEY FACTS: Part 7

- ❖ Minnesota Criteria requires medical documentation of the TBI by a physician.
- ❖ The TBI must be a result of an injury caused by an external physical force.
- ❖ The student must have a functional impairment attributable to the TBI that adversely affects educational performance in at least one of nine listed areas.
- ❖ Although brain injuries resulting from congenital or non-traumatic injury may result in a learner profile similar to that of TBI, these students do not meet criteria for TBI. In such cases, the educational team should consider other special education categories that best reflect the learner's needs.
- ❖ A team override is *not* an option when the evaluation team is considering qualification under TBI, but medical documentation is not on file. Although a lack of medical documentation may present challenges with regard to eligibility, there are options the team can consider when assisting the family with obtaining this documentation.
- ❖ A district is obligated to conduct an evaluation of a student, including a medical assessment, if necessary, at NO cost to the parents if the district suspects that the student has a disability that would result in Section 504 eligibility (which includes IDEA services).
- ❖ A student with a TBI has a unique learner profile as compared to other disability areas.

Part 8

Designing an Educational Program

Educational Needs of a Unique Learner

Executive Functioning

Recovery is an Ongoing Process

Program Planning

Ongoing Informal Evaluation

Individualized Education Plan (IEP)

Accommodations & Modifications

Statewide Assessment for Students with Disabilities

Essential Educational Approaches

Teaching New Skills and Concepts (Task Analysis)

Instructional Modifications, Accommodations and Supports

Compensatory Strategies

Environmental Accommodations

Key Facts

Educational Needs of a Unique Learner

Students who have experienced a TBI can be unique from all other students with regard to learning and behavior. Their changed learning profile is impacted by the location and extent of the injury, their age, and the ability of others to provide appropriate support. The recovery process can be hard to predict, and the resulting educational needs can be complex and often hidden.

Some of the unique needs that educators need to consider when creating an educational program for students with TBI are outlined below.

- ❖ The student may retain skills in some academic and functional areas while experiencing deficits in others.
- ❖ Previously learned information and skills may return, but new learning is often impaired.
- ❖ The student may demonstrate inconsistent patterns of performance, making it difficult to determine mastery before moving on to the next level.
- ❖ The impact of the injury on student performance and learning may not be immediately evident, and may not emerge until new learning is required.
- ❖ Children who are injured at an early age often experience long-term challenges in the area of learning because they lacked an established base of knowledge at the time of the injury.
- ❖ Behaviors resulting from the TBI can interfere with learning, and will require a customized approach in the educational environment.

Unique Needs, *continued*

- ❖ Previous learning styles or personality traits can become exaggerated, and sometimes can interfere with developing new learning strategies now needed to compensate for new cognitive or learning deficits.
- ❖ The student may demonstrate a lack of awareness of her/his new deficits and the need for educational supports.

Executive Functioning

It is not uncommon for students with frontal lobe injuries to experience deficits in the area of executive functioning, which is often described as a neurological construct that includes a collection of interrelated functions that are responsible for purposeful, goal-directed behavior.

The most basic level of executive functioning typically begins in childhood, and is defined as *self-activation*, demonstrated by the ability to maintain focused attention and make choices. As the child matures into adolescence, *self-regulation* skills begin to emerge, which is made evident by an increased ability to sustain attention, control impulses, make short-term plans and goals, store and retrieve more complex information, and flexibly shift between thoughts and actions. Higher levels of executive function skills achieved near adulthood include self-realization (self-awareness and analysis) and self-determination (long-term foresight and planning).

Students who have executive function difficulties as a result of a TBI often require accommodations and/or modifications to the environment, expectations, and instruction. Some examples specific to executive function skills are included on the following pages, as well as in an information sheet found in the Appendices section entitled, 'Executive Functions'.

Recovery is an Ongoing Process

Recovery from a TBI can often be unpredictable and inconsistent. Neurological improvement can occur for months and years after the initial injury. Early dramatic improvements are often the result of recovery from secondary injuries, such as a reduction in swelling and bleeding in the brain tissue. However, it should not be assumed that full cognitive recovery will be equally swift. Changes in neurocognitive function can occur over a number of years, and are often subtle. However, even as improvements are noted, new developmental milestones or expectations can lead to frustration, confusion or avoidance, requiring the team to be continually ready to support the student in new and meaningful ways.

Program Planning

Students with TBI typically struggle with multiple needs in a variety of areas, including cognition, language, social skills, sensory function, and behavior. While these students are capable of making remarkable progress when provided with carefully chosen accommodations, modifications and supports, they are at risk for frustration, failure, and diminished self-esteem when they are not adequately supported.

The educational placement of and services for a student with a TBI should be carefully considered, and based on a thorough evaluation conducted by knowledgeable team members, including a TBI specialist. The diagnosis of a TBI does not dictate a specific program plan or placement. Rather, a continuum of services and accommodations should be considered and customized for each student, depending upon the following variables:

- ❖ Age of onset
- ❖ Passage of time since the injury

Variables, *continued*

- ❖ Type of injury
- ❖ Pre-existing abilities
- ❖ Pre-existing conditions
- ❖ Health status
- ❖ Areas of deficit
- ❖ Environmental stability/support systems

As the recovery continues and the student responds to new challenges, instruction, and social situations, the team should closely monitor progress, note areas of concern, and make necessary modifications on a daily basis. Effective communication between the student, family and educators is especially crucial at this time.

Periodic formal and informal evaluation is an essential component of any educational program, but is perhaps most crucial for students with TBI during the first year post-injury, when the highest degree of recovery may occur. Adjustments to the student's program should be expected and implemented to keep pace with his/her changing needs.

Ongoing Informal Evaluation

The full impact of the TBI on student performance may not be fully evident immediately after an injury, and may in fact change over time. In addition to an initial comprehensive evaluation, the team should also continue to monitor and informally evaluate the student for the first year or more

after a return to school, and closely monitor areas of need typically seen in students with a diagnosed TBI, such as memory, attention, concentration, and executive functions. The team should also be watchful for any problems with new learning, and/or emerging problems not previously detected that can affect ongoing educational progress.

Individualized Education Plan (IEP)

For students who qualify for special education services, the IEP should address all areas of educational need, focusing particularly on cognitive, behavioral, and psychosocial needs identified through the comprehensive evaluation process.

Developing Goals and Objectives

Based on the student's unique learner profile, the IEP should identify appropriate goals, short-term objectives, and adaptations in the following areas, all of which are associated with educational needs often seen in students with TBI:

- ❖ The improvement of cognitive processes and development of compensatory strategies in the areas of memory, attention, and/or concentration
- ❖ The development of identified behaviors and social skills necessary for success in school, family, community and vocational settings

The improvement of executive functions necessary for effective and independent learning is also an important aspect for many students with TBI. This may include, but not be limited to, the following skill areas:

Executive Function Skill Areas:

- ❖ Identifying one's strengths and areas of need
- ❖ Setting goals
- ❖ Planning tasks
- ❖ Initiating activities
- ❖ Filtering comments
- ❖ Controlling impulses
- ❖ Self-evaluation
- ❖ Problem-solving
- ❖ Organizing materials and time

There may be other areas of educational need such as sensory impairments, speech/language needs, mobility issues, etc., but the above-listed areas share a common focus in that they are frequently identified as areas of need in students with TBI.

Prioritizing Needs

Not all identified areas of need require immediate attention. When developing the IEP, it is the team's responsibility to prioritize needs and develop a timeline acceptable to all. Consideration should be given to educational needs that:

- ❖ Most interfere with the student's ability to function in school
- ❖ Can be resolved quickly or compensated for

- ❖ Increase the student's academic and/or social/emotional success
- ❖ Are identified as major concerns by the student and/or student's family

Accommodations & Modifications

For students qualifying under the TBI category, accommodations and modifications are a critical component of the IEP, and require careful team consideration and advisement from the TBI specialist. A clear understanding of the student's needs as they relate to the TBI is a critical first step.

Accommodations

The Individuals with Disabilities Education Act has been reauthorized several times since 1975, most recently in 2004. IDEA 2004 uses the term "accommodations" to describe changes to the ways students learn and are tested. Other similar definitions suggest that an accommodation is a change that helps a student overcome or work around challenges imposed by the disability.

Types of accommodations may include:

- ❖ Supplementary aids and services to be provided to the student
- ❖ Classroom and testing accommodations
- ❖ Supports for school personnel to address the needs of the student with disabilities
- ❖ Individual accommodations in the administration of state or district assessments

Some **examples of accommodations** may include:

- ❖ Emergency evacuation plans
- ❖ Individualized Health Plan
- ❖ Modified school schedule
- ❖ Access to adaptive equipment and assistive technology
- ❖ Testing accommodations
- ❖ Extended assignment due dates
- ❖ Alternate response formats
- ❖ Additional adult support
- ❖ Alternate bus transport
- ❖ Alternate instructional setting (home, hospital)

Modifications

Modifications are often defined as a change in what is taught to or expected from the student. Adapting or modifying the content, methodology, and/or delivery of instruction is considered a modification, and alters the rigor of the academic task. Modifications are an essential component of special education and should be carefully considered by the educational team before pursuing a special education evaluation, particularly if the student's educational needs are complex and/or transitory. For this reason, TBI specialists receive specialized training in how to best determine if the student requires modifications to curriculum, materials and/or instruction (as well as accommodations) in order to be academically successful.

Types of modifications may include:

- ❖ Modified curriculum content
- ❖ Modified content for classroom assignments and tests
- ❖ Modified grading
- ❖ Modified course requirements
- ❖ Modified district and state testing requirements

Statewide Assessment for Students with Disabilities

The Federal Individuals with Disabilities Education Act (IDEA 2004), Minnesota State laws, and local district mandates require that all Minnesota students, including students with disabilities, must participate in assessments to determine if they have met academic performance standards, or are required to participate in an alternate assessment. An alternate assessment is a way for states to measure the achievement of students who have significant learning deficits, and are unable to participate in more standardized assessments.

For more information on statewide testing and accommodations, refer to [*The Minnesota Manual of Accommodations for Students with Disabilities in Instruction and Assessment*](#) found on the Minnesota Department of Education website. This manual is a helpful resource for IEP teams when determining the need for accommodations used in instruction and in assessment.

Essential Educational Approaches

Essential educational approaches for students with TBI that deserve consideration include:

- ❖ Teaching new skills and concepts, including *task analysis*
- ❖ Instructional modifications, accommodations and supports
- ❖ Teaching a student to use compensatory strategies
- ❖ Environmental accommodations

Teaching New Skills and Concepts

New learning is often difficult for students with TBI because of accompanying cognitive impairments in the areas of memory, attention, information processing and problem solving.

Teaching new skills should be carefully planned and structured, and may benefit from the following:

- ❖ Modeling the skill
- ❖ Utilizing auditory and/or visual cueing
- ❖ Prompting to shape the student's performance
- ❖ Reinforcing appropriate responses
- ❖ Using consistent approaches and extensive practice
- ❖ Generalizing learned information to new situations or settings

Another effective technique is **task analysis**, defined as breaking down the task into manageable steps. The purpose of using task analysis is to determine where the breakdown in learning is occurring during the task, and why.

Some considerations include:

- ❖ What *equipment and/or materials* are needed to complete the activity?
- ❖ How much *time* is needed to complete the activity?
- ❖ What *technical skills and knowledge* are needed for the activity?

Once these three basic questions have been answered, the specific demands of a particular activity can be assessed. Task or activity analysis is the process of analyzing and breaking down the task into its smallest performance components. When breaking down an activity, an educator must look at the primary skill areas needed and the individual abilities associated with each skill. The information below provides an overview of areas that should be addressed when trying to determine where the student is having difficulties.

TASK ANALYSIS: Motor/Physical Abilities

- ❖ What position does the student need to be in?
- ❖ What range-of-motion abilities are needed?
- ❖ How much muscle/physical strength is needed?
- ❖ What degree of coordination is necessary?
- ❖ What types of grasping skills or movement patterns are needed?
- ❖ Does this activity require the student to cross at midline?
- ❖ Can the student maintain balance while doing this activity?
- ❖ Is this activity a low key (passive) or high energy (active) activity?

TASK ANALYSIS: Sensory Abilities

- ❖ How does the student receive and respond to sensory information from the environment?
- ❖ What tactile skills are needed?
- ❖ What visual-perceptual abilities are necessary?
- ❖ How does hearing ability/sensitivity contribute to the activity?
- ❖ How does visual ability/sensitivity contribute to the activity?
- ❖ How does sense of smell contribute to the activity?

TASK ANALYSIS: Executive Function Abilities

- ❖ How much attention is required?
- ❖ What degree of decision-making is required?
- ❖ What problem-solving abilities are necessary?
- ❖ How much structure does this activity provide?
- ❖ What organizational skills are needed?
- ❖ What degree of adaptability/spontaneity is required with this activity?

TASK ANALYSIS: Cognitive Abilities

- ❖ Are abstract concepts a part of this activity?
- ❖ Does this activity require new or previously learned information?
- ❖ What are the memory requirements?

TASK ANALYSIS: Social/Emotional/Behavioral Abilities

- ❖ Is this an individual or group activity? Does it require cooperation with others?
- ❖ How does this activity affect the student's feelings about self?
- ❖ How does this activity affect or become affected by the student's peers? Teachers?
- ❖ How much emotional flexibility is needed for this activity?
- ❖ Does the student feel embarrassed and uncomfortable about his/her skill level, and actively participating in front of others?

Next Steps

After observing the student several times in a variety of settings and using a reputable method for data collection, the educator should also interview the student to gather additional anecdotal data.

The educator should then:

- ❖ Identify the tasks and settings that are posing the most challenges to the student.
- ❖ Break the task down. Choose one task at a time, and break it down into smaller steps. Identify any appropriate accommodations and/or modifications that may contribute to the student's success.
- ❖ Teach individual steps and strategies. For example, when using the strategy of reverse chaining, the teacher initially presents a task that only requires the student to master the last step. As the student experiences success, new

steps are introduced in a backward chain, allowing the student to build on previous successes and eventually accomplish the larger task.

- ❖ Practice with the student, with a focus on the components of the task that are most difficult. If necessary, work in an isolated environment while practicing.
- ❖ Continue practicing until the student demonstrates success with the full task, reminding the student to use the strategies that were most helpful.

Many times, classroom teachers are fearful that if the student is already falling behind their peers, breaking down the tasks will only slow things down more. They continue to give the student the complete assignment because they are focused on what the student is expected to learn at a particular grade level. Unfortunately, the student with a TBI may become overwhelmed and less successful as a result.

When successfully using task analysis from the beginning, the student will gradually begin to link the steps together independently and the teacher can gradually reduce the supports needed by the student.

Instructional Modifications, Accommodations and Supports

It is critical that the student continue to experience success from the first day of instruction following a TBI. This is important academically, and to the student's self-esteem and motivation. It is equally important that the student continue to progress educationally with peers and take advantage of all inclusionary opportunities to the greatest extent possible. Appropriate instructional modifications, accommodations and supports contribute to student success.

When developing an educational program for a student with TBI, it is important to analyze the multiple educational environments and identify appropriate supports for each setting. Research indicates that identifying and providing these supports in a purposeful manner can often minimize the effects of a disability, and promote placement in less restrictive settings. When identifying modifications and supports, factors to consider include, but are not limited to, the following:

- ❖ Environmental Factors (addressed later in this section)
- ❖ Scheduling Factors
 - Maintaining a consistent routine
 - Morning v. afternoon
 - Fatigue issues/need for breaks
 - Difficulty level of courses
 - Study hall(s)
- ❖ Assistive Technology
 - Computers, electronic tablets, digital recorders, smart pens
 - Smart phone technology (calendars, To-Do lists, apps, maps, contacts, text/email, etc.)
 - Remote technology/video-recorded lessons
 - Communication devices
 - Electronic textbooks
- ❖ Adaptations to materials
 - Large print, audio recordings

- ❖ Organizational tools
- ❖ Curriculum modifications and/or performance requirements
 - Extended time for testing
 - Modifications to assignments, projects and tests
 - Alternative course requirements or grading
- ❖ Staffing Needs
- ❖ Transportation

These program supports should be considered and matched to the student's identified needs on the IEP. The success of these supports can best be determined through systematic observations and feedback from others, including the student's feedback.

When and How Much?

In the beginning, it is usually better to provide too many modifications and supports, as compared with too few. Initially, it is best to provide more intensive support for the student to minimize stress, frustration, and possible failure.

However, it is also important for the team to prioritize areas of difficulty to avoid overwhelming a student, parent or classroom teachers. After the team has become familiar with the student, it is suggested that they come together as a group and focus on some primary overlapping areas of need, and use this as a way to re-prioritize needs.

Increased Demands

On occasion, a student may unexpectedly need more support than before because of increased demands that were not previously present, such as a change in the course schedule, increased difficulty with the curriculum, placement changes to less restrictive or less structured settings, grade or school changes, or no apparent reason at all. Cognitive impairments that were previously unnoticed may become more apparent, and supports may need to be introduced or re-introduced.

In some cases, new behaviors may emerge. This may be due to frustrations with expectations the student is unable to meet, such as difficulties with schoolwork or social situations. When any of these situations occur, note that the strategies being put in place may be short-term. Establish a timeline and carefully monitor the situation.

Overall, a flexible approach should be promoted to ensure that adequate supports are in place (or can be quickly put in place) to address a student's changing needs.

Embedding Modifications into Instruction

Educators should approach instruction in traditional academic subject areas with two goals in mind: teaching the content; and addressing the student's broader cognitive deficit areas. The integration of these two goals is necessary to ensure that the student continue to learn subject content along with peers (to the best of his/her ability). This is also an opportunity to work on impaired cognitive and executive functions such as: initiating and attending to tasks; recall; making choices; organizing thoughts, responses, and materials; problem solving, etc.

For example, a math lesson is not only an opportunity to address math concepts; it is also an ideal time to look at and support the skills on the following page.

- ❖ Locating the book inside desk (or bringing to class from locker)
- ❖ Turning to the correct page in the text
- ❖ Listening to directions
- ❖ Putting name at top of page
- ❖ Starting assignment with others
- ❖ Aligning numbers on paper
- ❖ Turning in work, etc.

Instructional Interactions

Instructional interactions often present opportunities to improve the student's executive functions by asking questions related to planning and evaluating her/his performance. Some questions to consider asking the student include:

- ❖ Is this easy or difficult for you? Why?
- ❖ How well do you think you will do/did? Why?
- ❖ Can you tell me what the directions are?
- ❖ What is the first step with (assignment/project)? Next step?
- ❖ When is (assignment/project) due?

- ❖ Do you need help? How will you get the help you need?
- ❖ Did you do as well as you had hoped?
- ❖ What could you do to improve your work/grade?

Curricular Modifications

Students with TBI often have profiles characterized by both *preserved islands of skills* and *gaps in basal areas*. In some cases, students may have intact higher level cognitive skills but have difficulty performing lower level tasks, which are often critical for success with many everyday tasks. For example, a student may be able to complete division problems, but experience difficulty with simple math problems.

Most curriculum is sequenced-based and part of a skill hierarchy, and achievement at a given skill level implies that a student has all related antecedent skills intact. For students with TBI, this assumption should not be made. Conversely, the assumption that a student who cannot perform a specific skill has not retained higher level skills may also be incorrect. Instruction should focus on preserving higher level intact skills while practicing lower level skills that have been lost.

Instructional Modifications

Educators must also consider modifications in their teaching or instruction in order to promote successful learning situations for all students. An example is outlined below.

Instructional Goal: Assist student with organizational difficulties

Suggestions:

- ❖ Consolidate lengthy directions into smaller steps or chunks

- ❖ Provide student with list of key words and concepts immediately prior to introducing lesson
- ❖ Help student organize her/his thoughts by teaching from a concrete to abstract level, and provide examples
- ❖ Use techniques to help student categorize and associate or link new information with previously learned information

Additional suggestions for instructional modifications can be found in the Appendices section.

Compensatory Strategies

Some cognitive deficits experienced by students with TBI may not respond to remediation and will require that the student develop strategies to compensate for these difficulties. Compensatory strategies are defined as a method of applying tools or methods to compensate for lost or diminished abilities. Most people use compensatory strategies and tools throughout a typical day without realizing it, such as technology devices, calendars, maps, recorders, study techniques, planners, etc. Compensatory strategies for students are simply tools and methods that help them achieve goals, and are essential to their increased independence and success. Some strategies may be utilized in a variety of settings, including the student's home, school, and community.

Some Examples

Utilizing *smartphone technology* is a very popular and accepted way to compensate for the need to remember a vast amount of detail in an increasingly complex world. For students with TBI, utilizing smart phone apps and tools offer many opportunities to compensate for organizational, time management, and attention deficits. Providing customized calendars, address books, maps, To-Do

lists, reminders, and an alarm clock all in one handheld device has made work and personal life much easier to navigate for many individuals.

The use of mnemonics is a popular method for improving memory and recalling information. Many of us remember using the acrostic method to remember the G-clef notes in a school music class (Every Good Boy Deserves Fun = EGBDF). Other mnemonic techniques include acronyms, chaining, rhyme-keys, loci method, image-name technique, etc.

There are literally hundreds of compensatory strategies, most of which will need careful consideration and customization to fit the needs and strengths of an individual student, the environment, and the expectations. A few examples are offered on the following page.

Examples of compensatory strategies include:

- ❖ Identifying a study location that enhances focused attention
- ❖ Developing a study schedule
- ❖ Recording class notes
- ❖ Developing a story outline through webbing
- ❖ Rehearsing as a study technique
- ❖ Highlighting main ideas in notes or texts
- ❖ Keeping an assignment log, and checking off work when complete
- ❖ Choosing to sit in a desk close to where the instruction will occur

- ❖ Utilizing a school map or schematic to aid in recall of room locations
- ❖ Using color filters or enlarged text for reading

Identifying and Teaching Compensatory Strategies

One of the team's most important tasks is to assist the student in identifying which strategies will work best for him/her, and then customizing each strategy to their unique needs and abilities. The team should utilize both formal and informal evaluation results, and work closely with the student, other teachers and the family to identify potential strategies before implementing. *If the student is not invested in the process, the strategy will likely not succeed.*

When instructing the student on how to use a compensatory strategy, it is important to consider following:

- ❖ Identify and discuss the specific strategy with the student
- ❖ Model the strategy
- ❖ Have the student practice in a supported environment
- ❖ Share frequent feedback
- ❖ Make adjustments
- ❖ Implement in familiar settings, then generalize to unfamiliar settings

Compensatory strategies can promote independence and successful functioning in academic skills, social skills, behavioral control, and problem solving. It is important not to overload the student by

attempting to introduce more than one or two compensatory strategies at a time. Once mastery in using the strategy is noted, the team can then consider introducing other strategies.

Selected strategies should be age-appropriate and consistently applied in all identified settings by all involved team members, including educators and family. Very young children or students with severe cognitive deficits may not understand the purpose of compensatory strategies and should not be required to follow this approach.

Compensatory Strategy Principles

A student with TBI may lack awareness of their new deficits, and subsequently may not see the benefits of compensatory strategies. It is critical that the educator work closely and respectfully with the student to help them better understand their changed abilities and needs. Some principles to take into consideration when working with compensatory strategies include the following:

- ❖ Assist the student in becoming more strategic in their approaches to learning, and understand the rationale behind the strategy each time it is introduced.
- ❖ The use of compensatory strategies must be taught to a student, often requiring frequent instruction and practice. Do not allow the strategy to get so complex that it interferes with the student's ability to concentrate on the task at hand.
- ❖ The number and types of strategies introduced should be limited because a student's ability to concentrate and attend is often impaired.
- ❖ Compensatory strategies can take a long time to master, but may also need to be modified or eliminated. Consistency is important, but so is flexibility.

- ❖ Students need to practice strategies to the point where their use becomes automatic. They should be encouraged to 'own' the strategies, and be involved in the process of deciding which strategies to try, which to keep, etc.

Environmental Accommodations

In addition to evaluating and implementing instructional modifications and compensatory strategies, the team must also assess and address the demands of the new environment, and the child's ability to meet those demands. Although environmental accommodations may be essential in the beginning (and, indeed, may always be needed to some degree), the goal for all students should be to gradually decrease the amount of environmental supports whenever possible.

When identifying potential environmental accommodations, the team should consider:

- ❖ What are new, unfamiliar or confusing situations or environments to which the child will be exposed? (e.g., school building, cafeteria, different bus, gym, playground, latchkey program, field trip locations)
- ❖ What are the activities that will be required in each of these new, unfamiliar or potentially confusing environments? (e.g., moving between classrooms, locating and opening locker, carrying food tray, locating and boarding bus)
- ❖ What are the skills the student will need in order to be successful in these environments? (e.g., finding correct room, making choices, following a schedule, remembering locker combination or key, bringing the correct materials to class)

- ❖ What are the skills the student already has? (e.g., scaffolding or building on existing skills or abilities)

Examples of Environmental Accommodations

Various types of adaptations to the physical environment might include:

- ❖ Preferential seating arrangements
- ❖ Optimal location of classrooms or settings
- ❖ Number of classrooms
- ❖ Architectural barriers
- ❖ Lighting
- ❖ Noise level
- ❖ Alternative locations for studying and/or taking tests

Additional Examples

The reader will find many additional examples of instructional techniques, compensatory strategies and environmental supports in the Appendices section of this manual that may be considered as starting points for team discussions.

KEY FACTS: Part 8

- ❖ Students with TBI have unique and complex needs and learning profiles.
- ❖ Recovery from a TBI is ongoing, and levels of support should be closely monitored for any needed changes.
- ❖ Identified areas of need should be prioritized; not all deficit areas need to be addressed at the same time.
- ❖ A variety of accommodations and modifications may be required- particularly in the first months following the injury. Err on the side of providing more support rather than less.
- ❖ An effective approach to teaching will include a variety of techniques that may include modifications to curriculum, instruction and materials; environmental supports, and compensatory strategies.

Part 9

Behavioral, Emotional & Social Changes

Behavioral Changes Following a TBI

Multiple Factors to Consider

Behavioral & Emotional Changes

Positive Behavior Strategies & Supports

Environmental Accommodations

Specialized Behavioral Instruction

Examples of Positive Behavior Strategies

Antecedent Behavior Consequence (ABC) Model

Adolescents with TBI: Behaviors and Strategies

Evaluating the Environment & Behavior

Teaching Appropriate Behaviors

Impact of TBI on Self-Esteem and Emotional Maturity

Impact of TBI on Social Relationships

Connecting Areas of Deficit with Potential Social Challenges

Social Skills Training

Key Facts

Behavioral Changes Following a TBI

The social, emotional and behavioral changes that may be experienced by children and youth with TBI are often the least understood aspects of the injury, and can be the most challenging to address in the home, school and community settings. Additionally, the child may appear to be back to baseline, but subtle neurological changes that affect behavior can still exist. Such difficulties are not always evident when the student first returns to school following a TBI. These behavioral changes may initially be masked by other, more obvious impairments or injuries, or they may emerge later as school challenges mount.

Behavioral challenges in students with TBI can also be difficult to understand and deal with because they are often interrelated with social, cognitive, and pre-injury characteristics. In addition, some students with TBI have significant frontal lobe damage that may result in a loss of impulse control, judgment, and memory. Some students, particularly those injured at a younger age, may fail to develop social and behavioral controls typically seen at later stages of adolescent development.

Multiple Factors to Consider

Following a TBI, it is not unusual for a child or teen to exhibit behaviors that appear to be exaggerated or have never been seen before. Additional consideration will need to be given to situations in which a child was diagnosed with a disability prior to the TBI, and behaviors are now magnified. For example, a student may have a diagnosis of attention deficit hyperactivity disorder (ADHD) a number of years prior to the TBI. Following a brain injury, school staff and family may note that there is increased impulsivity and/or irritability; and decreased ability to initiate, focus, attend to and complete tasks.

Part 9: Behavioral, Emotional & Social Changes

Occasionally, there is a history of a previous TBI in addition to the more current brain injury. As a result, there may be accumulative effects that could exacerbate previous learning deficits and behaviors.

Such situations will require careful consideration on the part of the school team as they attempt to sort out pre-existing conditions and related behaviors, and determine the degree of impact from those past injuries or conditions and the recently acquired TBI.

Behavioral changes can follow a somewhat predictable pattern, depending upon the degree and type of the brain injury, but each child is unique in how the injury may impact the brain. Behavioral changes can last for days, months, or longer. In some cases, a TBI can have long term implications in how a person feels, acts, and relates to others. These changes often cause significant distress and concern on the part of the family and school. The child or teen who has sustained the injury may also be concerned, confused, or show a lack of awareness of the emotional and/or behavioral changes they have undergone since the injury.

Emotions and behaviors are closely related. The student's emotional status can be in reaction to the injury, and can trigger behavioral responses. For example, a student who is experiencing depression and anxiety because of the TBI may react by showing more irritability, anger, or frustration. Or the behaviors may be the direct result of organic changes in the brain caused by the TBI, resulting in the inability of a child or teen to inhibit or control their behavioral responses.

Some examples of behavioral and emotional changes can be found on the following page.

Behavioral Changes

- ❖ Low frustration tolerance
- ❖ Agitation
- ❖ Inflexibility
- ❖ Sense of apathy
- ❖ Aggression
- ❖ Impulsivity/disinhibition

Emotional Changes

- ❖ Depression, moodiness and/or withdrawal
- ❖ Anxiety
- ❖ Poor self-esteem
- ❖ Appears to be unmotivated
- ❖ Anger
- ❖ Irritability
- ❖ Lack of insight; denial of changes or challenges

Positive Behavior Strategies & Supports

An effective behavior plan should be based on a foundation of positive behavior supports, and should include strategies that combine environmental accommodations and specialized behavioral instruction. While there are many behavioral approaches (such as those relying on contingency management of rewards and consequences), strategies that employ positive behavioral supports and antecedent behavior management are often most effective for students with TBI. Other behavioral approaches, such as consequential behavior management (CBM) rely on a student's ability to remember previous behaviors and consequences, and therefore are generally not effective with this population.

Environmental Accommodations

Following a TBI, students often experience difficulties in coping with environments that are unstructured, change frequently, or provide too much visual or aural stimulation. As a result, they may become easily distracted, disoriented, or agitated. Providing a calming, routine environment across settings offers an opportunity for students with TBI to be more successful. Later, these students may be able to learn how to modify multiple environments themselves to fit their unique learning style and needs. Encouraging consistency across environments with regard to structure, expectations, and supports is crucial for success, particularly during the early part of the recovery period.

Noisy, active, or unstructured environments may also require students to quickly process information and/or respond to confusing and changing expectations. Providing adjustments or additional behavioral supports in these settings for students with TBI is often necessary during the first days, weeks or longer upon their return to school. Examples of some settings and corresponding supports are seen on the following page.

Environments	Supports
Large, noisy or active classrooms	Portable carrels; headphones; access to quiet room for rest or work
Hallways	Pass during less congested times; locker near home room; classes clustered together
Cafeteria	Choose quieter area of cafeteria; support when going through lunch line; preferred or selected lunch mates
Playground	Increased supervision; guided activities; confined area; option for indoor recess & preferred activity
School bus	Seated near front; support from bus paraprofessional
Gymnasium	Small group activities; headphones; use alternative rooms or areas
School assemblies or large events	Provide a quieter corner; provide an alternative activity or an option to <i>not</i> attend

Specialized Behavioral Instruction

Students with TBI often benefit from specialized instruction provided by educators who are skilled and trained in social/behavioral functioning, and are knowledgeable in the area of TBI. These educators should monitor the student's ongoing social and emotional status through discussions with the student and team members (including parents/guardians), and observations of the student.

Information about the student's pre-injury personality and behaviors can provide important insight when developing social or behavioral strategies and supports, and should be part of the initial evaluation. The school team should also develop an educational plan that focuses on relearning social skills with an emphasis in cueing, instruction, practice, rehearsal, role playing, and frequent monitoring of progress.

Part 9: Behavioral, Emotional & Social Changes

Staff can also support students by helping them to:

- ❖ Understand and deal with emerging or new emotions, physical changes, and learning problems that are a result of the TBI.
- ❖ Develop problem solving strategies to use when confronted with needing to make decisions or address difficult situations. This may include exploring alternatives and consequences.
- ❖ Recognize the areas that need improvement through real life examples and concrete feedback. (e.g., mock interviews, video modeling, etc.)
- ❖ Recognize their areas of strength. (e.g., skills, assets, likeable qualities, etc.)
- ❖ Recognize that they will continue to grow and improve over time; that they can learn how to compensate for deficits; and can learn new skills.
- ❖ Set realistic short term goals in areas where progress can be seen and measured. Goals should align with what is important to the student.
- ❖ Participate in structured social skills groups, and provide resources and information about TBI to the facilitator.

Although it is important to identify one or two staff on the team to serve as primary contacts in the area of social/behavioral instruction, it is also important to recognize that every individual on the school team plays an important role in this area, and should be aware of and work together with the student on their identified goals and strategies. This assurance, support and consistency are important factors that can tie into all areas of student success.

Examples of Positive Behavior Strategies

There are a number of ways that educators and family members can support a student through the use of positive behavior strategies and supports. The list below offers some suggestions for teams to consider as they work with the student to develop goals, objectives and accommodations.

What Educators and Family Members Can Do

- ❖ Provide visual schedules (e.g., daily schedule, tasks or routines on visible charts or handheld devices).
- ❖ Set up and reinforce structure and consistency in the student's schedule as much as possible; share organizational tools.
- ❖ Prepare the student for upcoming transitions; provide reminders, timer and/or cues as time nears.
- ❖ Prepare the student for unanticipated changes in a schedule or routine.
- ❖ Provide periodic rest breaks.
- ❖ Provide a way for the student to communicate his needs in an effective and simple manner (e.g., 5 Point Scale).
- ❖ Break down tasks into manageable smaller steps. Don't overwhelm the student, particularly when introducing something new.
- ❖ Follow through on previously established contracts or promises; promise only what can be delivered.

What Educators/Family Members Can Do, *continued*

- ❖ Provide frequent opportunities for pleasurable, meaningful activities and breaks; intersperse with more challenging activities.
- ❖ Use words of encouragement and positive reinforcement in a meaningful way. Ignore inappropriate or unwanted behavior, and/or redirect.
- ❖ Focus on positive goals and strengths, and how they can be used to address needs.
- ❖ Intervene early before behaviors escalate.
- ❖ Don't try to reason with the student when they are agitated, angry or acting out; use a soothing, quiet voice to calm the student.
- ❖ Acknowledge their frustrations; discuss the relationship between TBI and changes in behavior & learning. Model appropriate behaviors.
- ❖ Create subtle signals or cues with the student to help him/her remember the 'stop & think' strategy.
- ❖ Use positive or neutral redirection whenever possible, but also provide direct feedback if needed.
- ❖ Assist the student in identifying possible consequences for actions.
- ❖ Assist the student in weighing pros & cons regarding decisions and behaviors; share objective observations, use video recordings, etc.

What the Student Can Do

- ❖ Share your feelings with a trusted adult; let someone know if you need help, or if you need a break.
- ❖ Learn how things that happen around you (your environment) can affect your feelings and behavior. Figure out what your triggers are, and how to avoid them.
- ❖ Participate in setting goals for yourself that are realistic and meaningful.
- ❖ Learn some relaxation techniques to calm yourself when needed.
- ❖ Learn one new thing about yourself each week.
- ❖ Give yourself credit and celebrate when you've accomplished something that you've worked hard at.
- ❖ Do something physical every day (with your doctor's clearance) such as walking, sports, exercise, etc.
- ❖ Become a good self-advocate by learning what your needs are and how to take care of yourself.

Antecedent Behavior Consequence (ABC) Model

Antecedent management follows a prevention model that emphasizes managing behaviors *before* they happen. Research suggests that this intervention model is much more effective for students with TBI than the more traditional consequential behavior management (CBM) model, which uses positive and negative reinforcement to modify or change behaviors. If a student has cognitive or memory deficits resulting from a TBI, the student may not recall the positive or negative reinforcement they received earlier, or follow the complexity of a token system.

The traditional consequential behavior management (CBM) model often does **not** work for children and youth with TBI because the student:

- ❖ May not remember the rules or recall consequences if memory and/or cognition has been impaired
- ❖ May have difficulty controlling impulsive responses or reactions
- ❖ May not be able to read non-verbal cues
- ❖ May not understand subtle cause/effect relationships
- ❖ May lack insight about their own behavior
- ❖ May lack social empathy
- ❖ May see the consequence as punishment
- ❖ May have difficulty learning or generalizing new skills in different situations

Components of the ABC Model

- ❖ *An antecedent* is what happens BEFORE the behavior is exhibited, and can happen minutes, hours, or even days before the behavior occurs.
- ❖ *Behavior* is what happens in observable and measureable terms.
- ❖ *Consequence* is what happens as a result of the behavior.

Analyzing the environment and identifying the triggers, or antecedents, that directly or indirectly affect behavior can be a challenging but crucial step in the process of making adaptations to the environment, task and/or expectations, and decreasing the severity and frequency of an undesired behavior.

Antecedents can be:

- ❖ *Actions or words*, such as a teacher asking a student to answer a question, or giving attention to another student; or a student talking loudly.
- ❖ *Environmental*, such as a noisy cafeteria, a crowded hallway, or a too-brightly lit classroom.
- ❖ *Behavioral*, such as 2 students arguing, someone kicking a desk leg, or a difficult morning on the bus.
- ❖ *Emotional*, such as feelings of anger, anxiety or frustration.
- ❖ *Physical*, such as feeling tired, hungry, or having a headache.

Positive Approach

A positive approach to address behaviors should be built upon the process of identifying the behavior, consequence and antecedent; and then identifying and implementing strategies that will help the student avoid the problem in the future, develop coping strategies, or create alternative solutions.

Adolescents with TBI: Commonly Observed Behaviors and Possible Strategies

Behavioral Evaluation

It is important to establish a proactive approach and assume there may be some emotional/behavioral challenges when a student first returns to school following a TBI, or as the student approaches milestones or transitions. For example, it is quite common for previously unidentified behavioral concerns to emerge when a student transitions to a different classroom, grade, or school- particularly during adolescence.

When returning to school following a TBI, the team will certainly want to address emotional/behavioral needs as part of the initial evaluation process. When transitions approach, the student's team should prepare the student as much as possible prior to the change by providing opportunities to visit the new setting beforehand, meet new teacher(s), connect with a peer mentor, etc.

If behavior concerns increase or have existed for a long period, the team may want to consider administering a functional behavior assessment (FBA), which can assist the team in identifying antecedents and create strategies for decreasing unwanted behavior. Teams should be aware that modifying entrenched behaviors can take time. However, positive change is possible with good data, patience, a consistent approach, and appropriate strategies.

Evaluating the Environment

When evaluating an environment for triggers, consider the factors listed below.

Level of sensory comfort

- ❖ Temperature (too hot or cold)
- ❖ Auditory stimuli (volume and type)
- ❖ Visual stimuli (degree/type of light)
- ❖ Tactile (touch) or olfactory (smell) stimuli
- ❖ Number of people in close proximity

Other factors

- ❖ Who is (or is not) in the room
- ❖ What activity are people engaged in
- ❖ What are the expectations
- ❖ What supports are available for ensuring success
- ❖ How is the student physically feeling (fatigued, ill, has a headache)

Evaluating the Behavior

The purpose of any behavior can change frequently over time, so it must be continually evaluated. Once a behavior's purpose is understood, a strategy can be planned. Effectively evaluating behaviors include the following steps:

Identify Changes in Behavior

- ❖ Know how the student behaved and learned prior to the TBI.
- ❖ Identify changes in behavior after the injury.

Define and Evaluate the Behavior

- ❖ *Operationally define* the behavior in such a way that everyone understands and recognizes it. What is the student doing? How long does the behavior last?
- ❖ Assess the behavior by carefully observing the student and document everything that may be possibly related to the behavior in question. What is the purpose behind the behavior? What are the antecedents, i.e., where was the student when the behavior was observed? What time of day? What happened before the behavior- in terms of seconds, minutes, or hours? How was the student feeling? Who was present? Were there any changes in the routine or supports?
- ❖ Identify the changes or strategies that will be most successful in meeting the needs of the student so that the unwanted behavior is no longer necessary.

Evaluate Regularly and Often

- ❖ Focus on compensatory strategies and accommodations.
- ❖ Consider any cultural or language differences.
- ❖ Frequently review the strategies and make adjustments as needed.

Some examples of pro-active behavioral strategies for adolescents with TBI are outlined in a document developed by the Courage Kenny Rehabilitation Institute entitled, *Adolescents with TBI: Commonly Observed Behaviors and Possible Strategies*, and can be found in the Appendices.

Teaching Appropriate Behaviors

When a student shows excessive agitation, anger, or aggression, educators should not assume that the student is aware of acceptable boundaries and/or that he/she is capable of modifying or altering inappropriate behavioral responses. Appropriate responses may need to be taught through a series of instructional approaches that incorporate a variety of methods such as modeling, rehearsal, and cuing.

Confrontation and delayed consequences such as detention and suspension from school activities are likely to be ineffective at best, and may actually increase levels of frustration, anger, and misunderstanding. Work directly and proactively with the student to understand antecedents, such as *why* he/she feels and acts when in certain settings, situations or with specific people, and provide acceptable alternatives to avoid challenging situations in the future.

If the strategy doesn't work, don't be afraid to try new strategies or review previously used ones.

Ensure the strategies continue to be effective and current by:

- ❖ Involving both the student and family when developing the plan.
- ❖ Focusing on the student's strengths, needs and preferences.
- ❖ Providing a nurturing and welcome environment for the student.
- ❖ Providing structure and routine so that the student can anticipate needs.
- ❖ Alerting the student to possible changes, as well as providing sufficient notice and opportunities to practice new strategies.

Relaxation Training

Relaxation training has been noted to be useful with both adults and students with TBI. Relaxation training is used as a more effective calming method to cope with feelings of anger and tension (Denmark & Gemeinhardt, 2002). The individual learns relaxation strategies that he/she can implement when such feelings emerge. Some examples of these techniques are progressive muscle relaxation, guided imagery, biofeedback, breathing exercises, and forms of meditation.

Impact of TBI on Self-Esteem and Emotional Maturity

Prior to a TBI, a student may have a fairly clear understanding of who they are, such as their abilities and interests, their dreams for the future, their identity within a family unit, and their friendships with peers. After sustaining a TBI, a child or teen's perceptions of his/her own competence, intelligence, future plans and social success can be drastically impacted. Research shows that as the student becomes aware of his or her injury and related limitations, self-esteem drops and self-doubt and depression are frequent outcomes. Some students may have difficulty

understanding and adjusting to the changes in their lives resulting from the TBI, and may confabulate or create a more acceptable world for themselves.

Students with mild TBI may also experience physical and cognitive changes in functioning that can have an impact on their self-esteem and social skills. Due to changes in their ability to learn information and academically succeed, they may feel discouraged, frustrated, and less certain of their skills and status with peers

As students enter into the adolescent stage of development, it is quite natural that they attempt to establish autonomy separate from adults in their lives, test the boundaries of authority, explore their sexuality, and experience a greater degree of intensity with regard to feelings and peer relationships. Following a TBI, these feelings may become more conflicted due to diminished problem solving abilities and impulsive behaviors.

Impact of TBI on Social Relationships

Research indicates that children with TBI often experience a loss of friendships during the first year of recovery. Challenges in the areas of cognition, communication, and behavioral skills can interfere with maintaining and initiating new friendships, often in subtle ways

The student may initially receive a significant degree of support from staff and students upon their return to school, but as time passes, friends may drift away and the child or teen may experience feelings of increased social isolation and poor self-esteem. The family and school team will need to work closely with the student to create and support an ongoing support system that will supplement or replace previous systems.

Younger Children

Children with a history of a past TBI may miss out on the everyday experiences that allow for social skills development. A child may lack the ability to interact in an age-appropriate manner with peers, or be too fatigued after a full day at school to have any energy or after school activities.

Teens

Social skills and relationships become more complex as a child ages. As noted earlier, a TBI may affect a teen's ability to control impulses, understand more sophisticated social 'rules' or humor, read subtle social or contextual cues, understand different viewpoints, and be socially excluded as a result.

Teens may:

- ❖ Have trouble keeping up with friends
- ❖ Be frequently tired, tearful, isolated or withdrawn
- ❖ Have poor self-esteem
- ❖ Gain excessive weight
- ❖ Behave in an immature manner, laugh too easily, or seem socially awkward
- ❖ Be easily swayed or dependent upon others
- ❖ Be vulnerable to dangerous or unstable influences

Connecting Areas of Deficit with Potential Social Challenges

Additional social challenges resulting from a TBI are included in the chart below, and are aligned with specific areas of deficit that may result from a TBI.

Areas of Deficit	Potential Social Challenges
Attention and Language	Initiating and maintaining conversations
Memory	Remembering faces, names, social rules
Visual Processing	Reading social cues
Impulse Control	Making appropriate comments
Judgment and Decision-Making	Self-monitoring of behavior and language; degree of influence by others
Planning and Organization	Making and keeping plans with friends
Problem Solving	Navigating social relationships
Insight	Expressing empathy and understanding
Energy Level and Motivation	Keeping up with friends and activities; following through with plans
Visual-Perceptual Awareness	Maintaining appropriate social space
Information Processing	Reading social cues, understanding humor, gestures, body language, facial expressions
Initiation	Appropriately engaging in activities

Social Skills Training

Social skills training programs are geared toward individuals who lack interpersonal skills and the ability to effectively communicate their needs in a problem situation or conflict (Denmark & Gemeinhardt, 2002); or with peers and adults in social settings. This type of program focuses on the development of social skills, assertiveness, and problem solving techniques. For students with TBI, this type of training may be helpful, particularly as it relates to role modeling. This technique allows the educator and student to practice various social communication situations in a safe environment, while learning appropriate responses or strategies and providing opportunities for repetition and rehearsal of new skills.

Tips for Teaching Social Skills

- ❖ Provide more supervision than is typically considered appropriate for the age.
- ❖ Identify a person who the student is comfortable with, and who can provide support and guidance in social situations if needed.
- ❖ Identify clear social boundaries if judgment is an issue.
- ❖ Use role-playing or video-modeling as a method of informal instruction.
- ❖ Help the student identify potential areas of interest or hobbies, and consider involvement in structured after-school or community groups.
- ❖ Use concrete methods for teaching abstract concepts. (e.g., using a ball or circle on the floor to demonstrate a '2 foot bubble' of social space.)
- ❖ Firmly address unacceptable social behaviors.

Tips for Teaching Social Skills, *continued*

- ❖ Involve the younger student in a social skills group where specific skills can be developed and nurtured.
- ❖ Match the student's strengths with opportunities to shine in the classroom or school building, such as a special job or task. Pair with another student to encourage social connections.
- ❖ Observe the student in the lunchroom, hallways, gym, and playground (and school bus if feasible). Consider video-modeling to develop targeted social skills; or connect with a peer-buddy to increase interaction opportunities.
- ❖ Create positive social environments with a small circle of friends at the beginning, retaining and building more meaningful friendships.
- ❖ Identify a school staff person who has a strong bond with the student, and ask that he/she check in with the student on a daily basis.

Tips for Helping Peers of the Student

- ❖ Provide open and honest communication and concise information about TBI at an age/grade-appropriate level.
- ❖ Discuss how to interact and show support to the student with TBI, including how to handle inappropriate or unusual behavior.
- ❖ Identify someone at the school who friends can turn to for advice and who can support their efforts.

KEY FACTS: Part 9

- ❖ Subtle neurological changes that affect behavior can often be missed, with more attention given to other more obvious deficits or injuries resulting from a TBI.
- ❖ Behaviors that were noted before the TBI can be exacerbated by the injury and seem more noticeable. This is also true of repeat TBI injuries.
- ❖ Behavioral changes can vary by type, intensity, and frequency. Some changes can be anticipated by the location of the injury, but most TBI's are diffuse in nature and can result in a complex behavioral profile.
- ❖ Emotional and behavioral responses are closely interconnected.
- ❖ Provision of a calm environment, consistent routine, open communication and positive behavioral strategies can do much to ensure a successful transition from hospital to school and home.
- ❖ Antecedent Behavior Consequence (ABC) model, which emphasizes managing behaviors *before* they happen, is much more effective than traditional models that use positive/negative reinforcement.
- ❖ When conducting an evaluation that will address student behavior, the learning environment must also be considered, including the level of sensory comfort, amount of activity, expectations, supports, and behavior of other students.

Key Facts, *continued*

- ❖ Appropriate behaviors may need to be re-taught through a series of instructional approaches that incorporate a variety of methods such as modeling, rehearsal, and cueing. Helping the student understand the link between antecedents and their behavior, and identifying appropriate strategies is critical for the student's future success and ability to self-advocate.
- ❖ Decreased self-esteem is often seen following a TBI, with self-doubt and depression as frequent outcomes. In addition to moderate /severe TBI, this is also seen in individuals with mild TBI/concussions if the symptoms become chronic and/or debilitating over time.
- ❖ Research shows that children and youth with TBI often experience a loss of friendships during the first year of recovery, likely due to deficits in the areas of cognition, communication and behavioral skills.
- ❖ Research also indicates that social skills training with a focus on assertiveness, problem solving, and social communication can be very effective as an instructional model for children and youth with TBI.

Part 10

Brain Injury and the Very Young Child

Brain Development

Mechanism of Injury

Other Factors

Non-Accidental or Inflicted Trauma: SBS/AHT

Impact of Injury

Implications for the Educational Setting

Acquired Brain Injuries

Key Facts

The Very Young Child

While every child with a brain injury requires individual consideration in the educational setting, there are some unique differences that should be noted when a child suffers a brain injury at a very young age.

For decades, the concept of ‘brain plasticity’ led the medical community to believe that younger children had the innate ability to use undamaged parts of their brain to acquire new skills after brain injury, and therefore better compensate for their injuries. While this may be true with some types of injuries or insults, it is now known that a very young child who suffers a brain injury may face lifelong deficits. This knowledge, combined with the fact that children aged birth to four are within one of the highest risk groups for sustaining a TBI, makes brain injury in the very young child a serious health concern.

Brain Development

Traumatic pathology in a very young child is significantly different than injury to adults for a number of reasons. Myelination is the process by which a fatty layer, called myelin, accumulates around nerve cells, and occurs during the first three years of life. Myelination enables nerve cells to transmit information faster and allows for more complex brain processes. Until myelination is complete, the consistency of the young brain is soft and more like custard, making it susceptible to forces of impact as well as the shearing forces of acceleration/deceleration. When young children sustain gross tears in the subcortical white matter of the temporal and frontal lobes, normal development of memory, language, and reasoning can be affected.

In addition, injuries to the young brain tend to be more diffuse or global, rather than localized to a specific area. The young brain also has a tendency to swell rapidly, creating higher risk for secondary injuries. Younger children are also at higher risk for post-traumatic seizures and epilepsy.

Mechanism of Injury

In addition to characteristics of the young brain itself, a young child's anatomy places them at increased risk for sustaining a brain injury. Young children have proportionately greater weight in the upper half of their bodies than adults or older children do. Given this distribution, the head, with its relatively large mass and volume, often becomes the major point of contact when the body falls.

Children are also more susceptible to falls due to their developing motor and sensory skills. In fact, falls are the number one cause of brain injury in children. In addition to falls, the child's brain is the most frequently injured part of the body in motor vehicle accidents (Muszynski et al). During a crash, in addition to blunt force injuries, the young child can also sustain trauma to the brain due to the acceleration/deceleration and the movement of the brain within the skull, even when restrained properly.

Other Factors

Another factor that influences a child's risk of sustaining a TBI is a lack of judgment and regulation, skills which are typically not acquired until late adolescence or early adulthood. In addition, children who tend to be impulsive by nature are more prone to injury.

Non-Accidental or Inflicted Trauma: Shaken Baby Syndrome/Abusive Head Trauma

Unfortunately, young children can also be victims of inflicted trauma such as shaking, and young children are at an increased risk of this as well. In one study, children who suffered from inflicted trauma (and were subsequently diagnosed with Shaken Baby Syndrome or Abusive Head Trauma) demonstrated a wide range of functional deficits, with some worsening over time. These children lacked the underlying neuro-anatomical structures typically seen in normally developing children, which allows for development of more complex thinking, expression, understanding, and recall.

Impact of Injury

In addition to being at higher risk for sustaining a traumatic brain injury, young children are also faced with significant consequences when an injury does occur. Synaptic connections and dendrite formations occur predominantly in the first two years after birth. Interruption of this process can produce what has been referred to as a cascading effect, exponentially impacting later developing neuronal tracts that are critical for developing skills.

One long-term study followed children who were injured before the age of two, and were then discharged from a medical facility without obvious impairment. However, during follow-up evaluations, it became easier to identify developmental lags in these children later during their toddler years. This and other studies show that children who suffer TBI at a young age can show persistent difficulties with memory, speech and language skills. Sleep abnormalities can also be present and can influence behavior and learning, and can ultimately negatively impact the whole family.

Implications for the Educational Setting

The age of injury, severity, cause and physiological response to a brain injury all play a role in a child's ultimate outcome. While it is not possible to predict an outcome after a brain injury, it is both helpful and critical to assess the child at various developmental milestones and transition points where previous learning is essential for the next step of development. For example, a child may acquire the ability to read, but it will be important to determine whether he or she has the cognitive skills to functionally use reading to learn and retain new information (the transition from "learning to read" to "reading to learn").

For many children injured at a young age, adaptations and accommodations for impaired executive functions such as planning, organization, retention and recall of information are often required. Early introduction of age appropriate reminders, organizational tools, calendars, and task lists can improve skills and reduce confusion and frustration. Similarly, early positive behavioral supports can assist with providing the structure, social network, and interaction that may not otherwise develop with a typical trajectory of development.

Because skill acquisition in the cognitive, social and communication domains during the preschool years is so critical for later development, it is important that children undergo periodic evaluation following their injury. Children may not demonstrate deficits until more complex cognitive functions are required; the deficits may also be initially subtle and hard to detect to the untrained eye. As a result, routine identification of strengths and cognitive challenges is recommended. Collaborative planning that includes the family, educational team, and medical providers will promote successful accommodation to the child's cognitive, sensory, and physical changes as he or she grows and develops.

For more information on the topic of school evaluation and the very young child, refer to Part 5 in this manual.

Acquired (Non-Traumatic) Brain Injuries and the Very Young Child

In addition to Traumatic Brain Injuries, children may sustain other injuries to the brain that can influence learning and development. This may include infectious processes, stroke, cancer or other conditions. While a child who suffered a brain injury in this manner would not qualify for special education under the TBI category, it should be noted that these children may present with a learner profile similar to that of someone with a TBI. These acquired *non-traumatic* processes can often cause devastating brain injuries in very young children and will likely need to be addressed through other special education categories.

Anoxic injury, which occurs when there is a lack of oxygen to the brain, is another type of non-traumatic acquired brain injury. Anoxic injuries can occur secondarily to near drowning, an obstructed airway, a cardiac event or near strangulation. These injuries can, and often do, have devastating outcomes. In anoxic injury, the brain is subjected to global damage, resulting in severe impairment and limited recovery. However, as with other injuries, outcomes can vary greatly depending on the length of the anoxia, and the age of the child. Some children have demonstrated a remarkable recovery because they were in a cold environment, and the brain may have been protected by the cooling effect of lowering its metabolic demands. Again, a child who sustains an anoxic brain injury that results in long term impairment and related educational needs would not meet eligibility criteria under the TBI category because the brain injury is acquired/non-traumatic, but should be considered for eligibility under another special education category if the student's educational needs warrant special education services.

KEY FACTS: Part 10

- ❖ There are many characteristics unique to the infant or very young child with a TBI when compared to older children, including type and degree of brain injury and resulting deficits.
- ❖ A young child is at increased risk for sustaining a brain injury due to proportionately greater weight in the upper half of their bodies when compared to older children or adults (and resulting in their heads becoming the major point of contact when they fall).
- ❖ Young children are more susceptible to falls due to their developing motor and sensory skills, as well as a lack of judgment and regulation- skill areas that are not typically acquired until late adolescence or adulthood.
- ❖ Young children who have been the victims of Shaken Baby Syndrome/Abusive Head Trauma typically demonstrate a wide range of functional deficits, with some worsening as they age.
- ❖ Studies indicate that young children who were diagnosed with a TBI before the age of two years later experienced developmental lags, with persistent difficulties in the areas of memory, speech and language skills, and chronic sleep abnormalities.
- ❖ Young children who have sustained a TBI must be carefully monitored throughout their childhood, and provided with appropriate interventions and services once educational needs are identified.

Part 11

Post-Secondary Transition: Considerations for Evaluation and Planning

School Transition Evaluation

Strategies for Facilitating a Smooth Transition

Standardized College Admissions Tests & Accommodations

Community Resources

College Disability Services

Supplemental Security Income (SSI)

Vocational Rehabilitation Services

Legal Supports: Age of Majority

Driver's Evaluation & Training

Key Facts

Post-Secondary Transition Planning in the School Setting

Transition planning is important at all stages of a student's education, especially when planning for the transition from high school to adult life. Minnesota Statute §125A.08 (b) (1) states that, during grade 9, the plan must address the student's needs for transition from secondary services to postsecondary education and training, employment, community participation, recreation, leisure and home living. Minnesota Rule 3525.2900 (Subp. 4) states that, by grade nine or age 14, whichever comes first, the IEP shall address the pupil's needs for transition from secondary services to postsecondary education and training, employment, and community living.

As part of this process, the evaluation and the Individualized Education Plan (IEP) are required to address transition needs in the secondary school setting, utilizing data from other evaluations and ongoing informal assessments. An invitation to the student to attend their IEP meeting is required at a minimum during grade nine. Decisions about post-secondary training, job/career development, and independent living options will not be embraced by the student if he or she is not part of the process or of value to him/her.

Identifying Options

When assisting the student with development of transition skills, school services may want to offer opportunities to participate in work experience programs, career and technical education classes in the high school or community setting, or post-secondary options courses at area colleges. These opportunities should be guided by the student's interests, strengths, and measurable postsecondary goals. As the student nears graduation, other individuals from the school and community agencies who provide instruction or support to the student should be included in the planning, such as a job coach, county social worker, and/or rehabilitation services counselor.

Providing transition support to students with TBI offers a unique challenge to school teams and families. Students often have needs that extend beyond the more typical passage into adulthood, and can include needs in the areas of financial planning, health care, residential options and home supports such as PCA services. Specialized transportation needs, a modified work environment, and customized social, recreational and leisure opportunities should also be considered.

School Transition Evaluation

Purpose

For each student, the district is required to conduct an evaluation that addresses secondary transition needs, and plan appropriate services to meet the identified needs. The evaluation is useful in establishing a baseline of acquired skills, and documents the student's strengths, interests, preferences, and needs relevant to vocational planning, placement, and work performance. If a neuropsychological evaluation was recently completed, this information should be included in the initial transition evaluation to identify strengths and limitations in cognitive, motor, and/or behavioral functioning.

Settings

A transition evaluation requires gathering and analyzing information from a variety of sources and evaluating the student's performance in a variety of environments including the classroom, community, work setting, etc. Standardized tests should be supplemented by situational observations, on-the-job evaluations and community based evaluations/work trials that focus on work skills. Age-appropriate assessments provide baseline data; assist the student in identifying strengths, interests and preferences; identify appropriate accommodations; support appropriate instruction and activities to achieve measurable postsecondary goals.

Areas of Focus

Areas to monitor as part of a functional vocational evaluation of a student with TBI should include:

- ❖ Awareness and appraisal of work abilities and deficits
- ❖ Attention, concentration and memory
- ❖ Ability to set vocational goals
- ❖ Ability to utilize compensatory skills
- ❖ Interpersonal skills and work behaviors
- ❖ Adapting to varying work demands
- ❖ Management of personal and self-care skills
- ❖ Emotional control
- ❖ Work performance and work skills
- ❖ Self-reliance in mobility/transportation
- ❖ Planning, organizing, and initiation of tasks
- ❖ Ability to generalize and transfer skills
- ❖ Problem solving
- ❖ Psychomotor skills and physical functioning
- ❖ Learning style and capacity for new learning
- ❖ Perceptual abilities
- ❖ Need for an availability of social supports
- ❖ Need for extended or long term support on the job

Strategies for Facilitating a Smooth Transition From High School to Adult Life

- ❖ Provide the student with hands-on experiences in all transition areas throughout the high school years. Gear the experiences to identified areas of vocational interest and strengths, and goals for the future.
- ❖ Develop a comprehensive transition plan that reflects data from current evaluations, knowledge of the student's strengths and areas of need, and vocational interests.
- ❖ Balance the need to be realistic about the student's abilities with their desire to pursue their interests and goals as an adult. Explore ways to provide the supports and services needed for a successful transition.
- ❖ Explore transition programming available in the school district if additional special education services and supports are needed to assure completion of IEP goals by the age of 21.
- ❖ Become knowledgeable about adult support services available in the community; check with the school district staff to see if there is a list of online resources and contact information.
- ❖ Work as a team to insure the IEP (or 504 plan) is up to date and includes relevant information such as accommodations,
- ❖ Create an electronic portfolio that reflects the strengths and interests of the student as they relate to employment, and post-secondary education and training. www.efoliominnesota.com

Standardized College Admissions Tests & Accommodations

The ACT (American College Testing) and SAT (Scholastic Aptitude Test) are standardized college admissions tests generally taken in the junior year of high school. In addition to such admissions tests, colleges also look at such factors as class rank, GPA and extracurricular activities. Schools should carefully document all needed accommodations on the IEP throughout the student's high school years. Students with documented disabilities (which must be submitted with the application accommodation request) may request accommodations when taking the ACT or SAT tests, including extended time and alternative formats. Students must complete an application before receiving permission to use accommodations.

ACT accommodations at many national registered test centers include extended time testing (50% more time) to take the test. Test Booklets are available in regular (10 point) or large type (18 point) format at these centers. It should be noted that not all national testing sites provide accommodations, and that not all applications are accepted. Families should plan early and check the ACT or College Board (SAT) websites for more information.

Special testing at the student's *school site* (as opposed to a test center) is designed for students whose documented disabilities require accommodations that cannot be provided at a national test center.

Examples of Accommodations

Examples of accommodations that can be provided at the student's school site include:

- ❖ *More than* time-and-a-half testing time
- ❖ Testing over multiple days
- ❖ Alternate test formats (Braille, cassettes, audio DVDs, or a reader)

School Site Accommodations, *continued*

- ❖ Use of a scribe or computer for the Writing Test (typically for disabilities that prevent students from writing independently)
- ❖ Extended time on the Writing Test only (students with developmental writing disorder, written expression, or dysgraphia)

Community Resources

A number of services and supports in the community are available to individuals with a disability such as a TBI, and are listed on the following pages.

College Disability Services

Section 504 of the Rehabilitation Act of 1973 and Title III of the Americans with Disabilities Act of 1990 (ADA) state that: *No otherwise qualified individual...shall, solely by reason of his or her disability, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.*

Post-secondary institutions that receive federal funding are required to offer support to students with disabilities as defined under Section 504 of the Rehabilitation Act. These colleges and universities have at least one designated staff member who is knowledgeable about Section 504 regulations as they pertain to accommodations and supports for students with disabilities.

Accommodations in post-secondary institutions for students with disabilities may include, but are not limited to:

- ❖ Removal of architectural barriers
- ❖ Provision of services such as readers for students with blindness, visual impairment, or learning disabilities; scribes for students with orthopedic impairments; and note takers for students with hearing impairments, learning disabilities, or orthopedic impairments
- ❖ Allowing extra time to complete exams
- ❖ Taking exams in a separate, quiet room
- ❖ Permitting exams to be individually proctored, read orally, dictated, or typed
- ❖ Permitting the use of computer software programs or other assistive technological devices to assist in test taking and study skills

Supplemental Security Income (SSI)

Supplemental Security Income (SSI) is coordinated through the Social Security Administration, and pays monthly checks to the elderly, the blind, and people with disabilities who meet income guidelines. SSI recipients often qualify for food stamps and Medicaid as well. A disability is defined as having a physical or mental impairment that is expected to last at least at least a year or result in long term care. Children, as well as adults, can qualify for and receive benefits as a result of a disability if they meet criteria.

Financial support may vary, depending upon a number of factors including family income, assets, etc. To receive benefits from the Social Security Administration, you must live in the United States as a United States citizen or other legal resident. Call 1-800-772-1213 to set up an appointment with a Social Security representative. People who are deaf or hearing impaired may call the toll-free “TTY” number: 1-800-325-0778. Local offices are also available throughout Minnesota.

www.ssa.gov www.socialsecurity.gov

Vocational Rehabilitation Services

Vocational counseling available through local school staff and community agencies such as the Department of Rehabilitation Services (a program under the Minnesota Department of Employment and Economic Development) are helpful in building and supplementing social supports, and identifying and developing the skills necessary for positive vocational adjustment.

Vocational Rehabilitation Services (VRS) assists individuals with disabilities in becoming employable. Services include diagnostic and evaluation services to help establish eligibility, guidance, counseling, education and training. Prior to a student’s senior year, contact the vocational rehabilitation (VR) counselor that works with the student’s district. Although the VR counselor may participate in team planning and attending meetings during the latter part of the student’s high school years, they typically don’t initiate formal services until the student graduates from high school. An individual may be able to access vocational rehabilitation services if the disability makes it difficult to develop work skills, and find or retain a job. In order to qualify for services, the VR counselor will review reports from the student’s physician, school, or other outside agencies.

Vocational Counseling Topics

Topics for vocational counseling specific to TBI might include the following:

- ❖ The impact the TBI has on the student's vocational planning and goals
- ❖ Identification and exploration of career interests, aptitudes, and work values
- ❖ Career planning
- ❖ Development of realistic career choices
- ❖ Employer expectations
- ❖ Community expectations
- ❖ Development of interpersonal skills
- ❖ Identification and utilization of vocational and social supports

Qualification for VRS services is determined on a case by case basis, and may be impacted by Federal funding. People who have serious limitations in specified areas will be served first. This is called "Priority of Services." There is no charge for counseling or job placement services. VRS can also pay for some services provided by other agencies. Service fees are based on a sliding scale.

Legal Supports: Age of Majority

For the family of an adolescent or teen with TBI, the prospect of adulthood brings unique challenges to mind. Parents/guardians are often concerned about the teen's judgment, ability understand the consequences of his or her actions, handling finances, living independently, and long term care issues. Fortunately, our legal system can assist families in assuring that resources and support will be available should a court of law agree with that judgment.

However, if parents/guardians do not follow legal steps to obtain guardianship of their child, guardianship will transfer to the young adult at the age of 18.

If families are concerned about whether their child will have the ability to legally make their own decisions once they turn 18 years of age, they should gather the required information and start the process close to their child's 17th birthday. An advocacy organization or an attorney can provide additional information and materials about the legal considerations of this decision. However, only a family court or probate court can legally determine whether a person is incompetent or incapacitated due to a mental impairment. The court may order various evaluations to be completed before a determination can be made.

The court may also determine that the individual with the brain injury may only require partial protection, such as with medical or financial decisions. In such cases, a legal conservator may be appointed.

If the court finds that the person with a brain injury is incompetent or incapacitated, then the court will appoint a guardian temporarily or permanently, and for limited or general purposes. If the court finds the person with a brain injury is competent, then any decisions that person makes are legally within their rights to do so. Often, parents will petition the court to serve as their child's guardian. This preserves the parent's ability to act legally on behalf of their son or daughter. It also gives them access to medical, school and other confidential or privileged records. There may be other legal means that parents can pursue in order to protect their grown child's needs if full guardianship is not necessary or granted by a court of law. For more information, contact an advocacy organization in your community.

Drivers' Evaluation & Training

A drivers' evaluation is designed to measure a person's ability to safely operate a motor vehicle. If a student has a disability and has not yet learned to drive, the evaluation might be their first step in determining their potential to drive a motor vehicle safely and independently. The evaluation will involve measuring visual, cognitive and physical skills, as well as the need for adaptive equipment, and will include a behind-the-wheel assessment. After completing a drivers' evaluation, recommendations will be given that may include drivers' training. Driver's training is based on the individual's needs and abilities in safely and independently operating a motor vehicle.

Driver's Education classes and behind-the-wheel training are typically provided outside the school setting, and considered an out-of-pocket expense for the student and/or family. However, the student and family should check with their local school district to determine available resources and supports, as this policy can vary. Customized behind-the-wheel training, driver evaluation, and mechanical modifications to a car are available through a few community vendors, but can be cost-prohibitive for many. When a student has applied for vocational rehabilitation services (typically during the junior year of high school) and has graduated from high school, he or she may want pursue funding support from the DVR to help offset some of these costs.

More Information

For more information on the topic of secondary/post-secondary transition, go to the Minnesota Department of Education website and type 'Secondary Transition' into the search box; then click on the top link. www.education.state.mn.us

KEY FACTS: Part 11

- ❖ Minnesota Rule states that, when a student with special needs reaches grade nine or age 14, whichever comes first, the team will conduct an evaluation and develop an IEP that will address the student's secondary transition needs
- ❖ A vocational evaluation should address such areas as degree of self-awareness, concentration, ability to shift between tasks, interpersonal social skills, problem solving, memory, etc.
- ❖ The education team should facilitate a smooth transition for the student by conducting a thorough evaluation, developing a comprehensive transition plan with the student's involvement and input, and creating opportunities for career exploration that are both of high interest and realistic.
- ❖ Explore the use of an electronic portfolio format as a way to engage students. www.efoliominnesota.com
- ❖ Students with documented disabilities such as a TBI may request accommodations when taking the ACT or SAT tests, including extended time and alternative formats.
- ❖ Colleges and universities which receive federal funding are required to offer support to students with disabilities as defined under Section 504 of the Rehabilitation Act.
- ❖ Students with disabilities may qualify for Supplemental Security Income (SSI), which provides supplemental financial support to those who qualify for benefits.

Key Facts, *continued*

- ❖ It is recommended that students become familiar with Vocational Rehabilitation Services (VRS) while still in high school by completing an application, inviting the RS counselor to IEP meetings, and learning about the services and supports VRS can offer following high school graduation.
- ❖ If there are concerns about the child's ability to legally make their own decisions once they are adults, families can request a court hearing for legal guardianship; this process should be started near the student's 17th birthday.

Part 12

Considerations for Working with Families

A Parent's Viewpoint

Resources and Information

Collaboration

Building Trust

Siblings

Key Facts

A Parent's Viewpoint

Recovery and rehabilitation from a TBI is a long and uncertain process, and can impact a family in multiple, and often unanticipated ways. Immediately following the injury, family members may experience shock, bewilderment, fear, and anger. These reactions are not uncommon, and may last for days, weeks or longer.

Following a TBI and hospitalization of their child, parents often report that they feel:

- ❖ Overwhelmed
- ❖ Physically and mentally exhausted
- ❖ Panicked and uncertain about the future
- ❖ Alone and isolated from everything that was familiar
- ❖ Anger at the cause of the injury
- ❖ Guilt that they were not able to prevent the injury

As their child begins to recover, other worries and concerns may enter into the picture. Parents often report being worried about:

- ❖ Costs associated with medical treatment and rehabilitation
- ❖ Taking time away from work
- ❖ Reactions from other family members and friends
- ❖ Impact on siblings
- ❖ Long term outcomes for their child

Also, the initial recovery can sometimes be misleading in terms of long-term prognosis, resulting in expectations on the part of the family that may prove to later be unrealistic. School staff should be sensitive and respectful as to where the family may be on this continuum of sometimes uneven or incomplete recovery.

Parents and educators may also have different timelines and expectations. Educators rely on an external framework that revolves around the academic year, subject areas, and curriculum. There is a consistency with such a framework, even though the students change from year to year. However, for the student with a recent TBI and the family, everything is continually new, different, and often difficult. Each year brings new teachers, new classes, new challenges, and new questions.

Resources and Information

As families move along this continuum, school staff will be in a unique position to assist them in accessing information about educational services and community supports.

If appropriate, suggest that families:

- ❖ Connect with other families who have had similar experiences. Utilize existing parent-to-parent support programs such as *Family Voices of Minnesota*, or hospital/community support groups.
- ❖ Contact the *Minnesota Brain Injury Alliance* for information, resources, and family supports.
- ❖ Contact the county human services department to find out more about waived services, respite care, Medical Assistance, etc.

Suggestions for Families, *continued*

- ❖ Start a home filing system to manage information and records.
- ❖ Start a journal to record progress over time.
- ❖ Consider joining a support group in the community or through a hospital or clinic affiliation.

Collaboration

School staff should anticipate that family members may react differently to the challenges that come with having a child undergo a traumatic and sometimes life-changing event. Educators should not assume that all families will have the same level of resilience, support systems, and coping strategies. Educators should also acknowledge that parents know the student best, and should have a clear voice as a team member, even though they may be relatively new to the world of brain injury.

When school staff are introducing families to specialized services and supports for their child or teen, consider the following:

- ❖ Involve the family in identifying a staff person in the school who they are comfortable with and would serve as a primary point of contact if concerns arise. This person does not necessarily have to be the IEP case manager, and may be the school nurse, the school principal, or the classroom teacher. Work out a plan for regular communication between home and school.
- ❖ Encourage creative problem solving that includes the parents when addressing behavioral or learning issues.

Considerations for Families, *continued*

- ❖ Anticipating and planning upcoming transitions (to different grades, schools, or programs) is helpful to both the student and the family.
- ❖ Make sure that parents know that you have heard their questions and requests. When you need to gather more information before responding to a question, give them a reasonable timeframe for a response.

Building Trust

Occasionally, parents may express frustration and anger about their child's educational program, lack of progress, type and amount of specialized services, etc. These emotions can be the result of many factors, including different coping styles, fatigue, frustration, and stress. Some of these causes are outside the control of the school, but there are effective ways to deal with such situations.

When a parent is expressing anger or frustration:

- ❖ Do not take their anger personally.
- ❖ If the conversation is taking place in a public area, ask if they'd like to move to a quieter area.
- ❖ If the exchange occurs in a meeting (such as an IEP meeting), evaluate whether the meeting should be rescheduled, and the time be devoted to a small group discussion centering on the parent's concerns. (Keep this possibility in mind when considering due process timelines, *or* determine the need for a pre-conference meeting to address sensitive issues beforehand.)

Addressing Parents' Feelings and Emotions, *continued*

- ❖ Give the parent(s) your full attention.
- ❖ Listen closely to what they are saying to you; restate their concerns so that there is clear understanding of what the issues are.
- ❖ Validate their feelings; there are no right or wrong feelings.
- ❖ Avoid blaming.
- ❖ Avoid the temptation to defend yourself or your colleagues.
- ❖ Give them as much time as they need to voice their concerns.
- ❖ Again restate what was shared, asking them to clarify points if needed.
- ❖ When there is agreement as to what the issue or concern is, begin to identify possible solutions together.
- ❖ Provide some form of written documentation that identifies the concerns, suggestions, responsibilities, and next steps.
- ❖ Avoid labeling the parent, and biasing how others perceive the family and student.

Over time, such communication will help diffuse anger and frustration, and increase trust and collaboration between parents and educators.

Siblings

A brain injury affects every member of the family, including brothers and sisters. It's not unusual for siblings to feel forgotten or abandoned as parents initially spend long hours at the hospital, or later trying to cope with rehabilitation services, outpatient therapy, school meetings, and ongoing doctor appointments. They may have many spoken (and unspoken) questions about their sibling who was injured. They may not understand the nature of the injury, or changes in abilities or behavior.

Children often fear what they don't know or understand. As educators, we may be asked by parents to offer suggestions about how to address questions or fears voiced by siblings, or other educators may approach a TBI specialist and ask for suggestions in working with siblings in the school setting.

Supporting Siblings

Educators may want to suggest the following to parents as ways to support siblings:

- ❖ Describe to them in simple understandable language how the injury occurred.
- ❖ Explain medical tests and procedures in terms they'll understand.
- ❖ Answer questions directly, but simply.
- ❖ Admit what is not known.
- ❖ Share information as soon as you can.

Supporting Siblings, *continued*

- ❖ Provide reassurance that their injured sibling is getting the best care possible.
- ❖ Allow them to visit their injured sibling if it is allowed by the hospital. However, don't force a visit if siblings are unwilling.
- ❖ Set aside special time just for the siblings; let them choose activities.
- ❖ If a parent can't be home on a consistent basis, set up a regular time to connect over the phone.
- ❖ Give siblings an opportunity to talk about their feelings of frustration, anger, or resentment. Remind them that this is normal, and in reaction to all the changes.
- ❖ Be watchful for signs that may indicate the need for additional counseling and support, such as nightmares, changes in eating habits, difficulties at school, moodiness, increased quarrels, risky behaviors, feeling responsible for the injury, etc.
- ❖ Use children's books and other resources that address TBI from a child's perspective, available through school, community or hospital libraries, or publication houses such as *Lash & Associates*.

Key Facts: Part 12

- ❖ When their child experiences a serious injury, parents often feel overwhelmed, exhausted, guilty, and isolated.
- ❖ Parents and educators may also have different timelines and expectations.
- ❖ School staff are in a unique position to assist families in accessing information about educational services and community supports.
- ❖ Educators should not assume that all families will have the same level of resilience, support systems, and coping strategies.
- ❖ Involve the family in identifying a staff person in the school who they are comfortable with and would serve as a primary point of contact.
- ❖ Encourage creative problem solving that includes the parents when addressing behavioral or learning issues.
- ❖ Anticipating and planning upcoming transitions (to different grades, schools, or programs) is helpful to both the student and the family.
- ❖ Make sure that parents know that you've heard their questions and requests.
- ❖ When a parent is expressing anger or frustration, do not take their anger personally, give them your full attention, restate their concerns, and identify solutions together.
- ❖ A brain injury affects every member of the family, including brothers and sisters. Siblings will need special attention and support too.

Part 13

Frequently Asked Questions

(FAQs)

General Information

Identification & Evaluation

Service Delivery

General Information

1. Is the severity of the initial brain injury indicative of the outcome?

The classifications of Mild, Moderate, and Severe for brain injuries are categories of injury severity, not predictors of outcome. However, most individuals with a mild injury make a full recovery while those with severe injuries are usually expected to have long-term deficits, and moderate injuries can result in anything in between. That being said, there are instances where someone with a mild injury can have ongoing symptoms which can lead to impairments in daily functioning and school performance.

2. What happens to the brain when it sustains a traumatic injury, and how does this affect learning?

Brain tissue is very fragile and has a consistency similar to gelatin, and is bathed and cushioned by cerebrospinal fluid within the skull. When blunt force trauma occurs to the head, the brain is impacted by this contact, often resulting in focal damage to brain tissue. Or the brain may be subjected to high-velocity movement such as with shaking or whiplash, creating movement within the skull and leading to tearing, ripping and bruising of brain tissue throughout the brain. This diffuse damage is further exacerbated by tearing and shearing on the surface of the cerebral cortex caused by contact with the bony, ridged interior surface of the skull. Additionally, brain injury from blunt force trauma or high-velocity movement can often result in a significant neurochemical imbalance in brain tissue, as well as bleeding and swelling. There may also be widespread damage within the cortex that can impair any number of functions in unusual patterns and may be associated with disorders in attention, concentration, and efficient information processing.

Identification and Evaluation

3. **What about brain injuries resulting from external and/or secondary causes, but are not as clearly defined as other more common causes of TBI? (e.g. Shaken Baby Syndrome/Abusive Head Trauma, neurosurgery)**

Some injuries are more straightforward than others in terms of how they fit the interpretation of TBI under Minnesota State criteria. If educators are uncertain about how TBI criteria can be applied to individual situations, the team should revisit the state definition and take all factors into consideration. In the case of shaken baby syndrome (SBS), also known as Abusive Head Trauma (AHT), this diagnosis is commonly identified as a form of TBI in that a brain injury to an infant/toddler has occurred involving external physical force (severe shaking perpetrated by another individual). In the case of medically necessary neurosurgery which results in residual brain damage, it is generally agreed that such an injury is external in nature and could be considered under the category of TBI.

4. **The documentation received from the doctor's office does not specifically say 'TBI' or 'Traumatic Brain Injury', but does include other diagnostic references alluding to a brain injury. How do I know if this documentation is sufficient in meeting due process requirements?**

In the medical world, there are many different terms that are used to specifically describe injuries which would fall under the category of traumatic brain injury. On the following page is a list of terms that you may encounter in medical documentation; all of these terms would be acceptable and in alignment with a medical diagnosis of a TBI.

Medical Documentation, *continued*

- ❖ Traumatic brain injury
- ❖ Head injury
- ❖ Skull fracture
- ❖ Subarachnoid, subdural, or extradural hemorrhage following injury
- ❖ Other or unspecified intracranial hemorrhage following injury
- ❖ Concussion
- ❖ Post-concussive syndrome
- ❖ Abusive head trauma
- ❖ Shaken Baby Syndrome (SBS) or Abusive Head Trauma (AHT)

In order to qualify a student under the TBI category, the documentation must be provided in written and/or electronic form, with a paper copy in the student's school file. A formal signed letter or medical dictation with the doctor's electronic signature and title are both appropriate. Secondary references, i.e., a reference made of the medical diagnosis embedded in a neuropsychologist's report, are not acceptable. Also, there is no formal time limit; documentation of an injury that occurred at any time during the child's life is acceptable.

The very nature of TBI can make the medical diagnostic process a sometimes difficult and challenging task for physicians. When injuries are moderate or severe, the process is often straightforward. When injuries are mild, there may be insufficient or no medical documentation at the time of the injury, and a lack of acknowledgement or awareness of educational problems. It is the educator's role to assist the family in following up with their physician to establish or clarify the diagnosis.

5. A student's medical records indicate that there is documentation of a concussion and/or TBI within the past few months. However, the physician indicated at the time of the ER visit or hospital discharge that the student had fully recovered with no indication of any cognitive or behavioral concerns. Yet school staff and parents have noted that the student has had persistent problems with memory, concentration, organization, fatigue and depression since the injury. Grades are dropping, and parents are concerned. Can the school conduct a special education evaluation and consider qualification under the category of TBI?

Yes. There is medical documentation that a brain injury did occur, and there are sufficient concerns in the school setting to warrant a special education evaluation. If the evaluation results indicate that there is a functional impairment attributable to the TBI, the team should then consider qualification under this category. Although physicians are required to provide written documentation of a TBI diagnosis, it is the evaluation team's responsibility to determine if there are related educational needs, and whether the student qualifies for special education services under the TBI category.

6. A student has no medical documentation of a past TBI, but an interview with a parent (or other anecdotal evidence) suggests that there was a previous TBI. The student's learner profile and educational needs also seem to suggest the presence of a brain injury. Can the student still be considered for qualification under the TBI Category?

No; unless a physician provides documentation of a TBI, the student cannot be considered eligible for special education services under the TBI category. Parents/guardians may want to discuss this issue with their physician to determine the best course of action. The school team may want to support these efforts by obtaining a release of information and providing the physician with academic/behavioral data and observations from the school setting.

7. Should a student be considered for qualification for special education services under the category of TBI, even though the injury occurred several years earlier?

If the student currently demonstrates educational needs that can be correlated with the TBI, then the answer is yes. The younger the child, the more profound the long-term effects may be, especially with respect to behavioral self-regulation and learning. When young children sustain a TBI, their brains are in the process of developing the pre-academic, social and behavioral skills that will provide the neurocognitive framework needed for more complex learning later in their lives. When this scaffolding process is interrupted, gaps in learning are created that may not be apparent until years later when higher level skills are required. Therefore, it would be appropriate to consider qualifying a student for special education services under the category of TBI regardless of when the injury occurred, assuming that the student demonstrates educational needs that align with a history of a TBI, as well as current educational needs as defined by State criteria.

8. When addressing the needs of a student who has suffered a concussion and is experiencing debilitating symptoms, should a team first start with a 504 plan? How long should a team wait before considering an evaluation?

There is no exact timeline. Such decisions depend upon the severity of the injury, how the injury impacts the student's functioning, and the length of time the student is symptomatic. These decisions are also based on the legal premise outlined in the U.S. Department of Education Regulations that all students be provided with a 'free appropriate public education' (FAPE) that is appropriate to their individual and changing needs.

Educational needs and accommodations can change quickly in the first days and weeks following a concussion. If the student is symptomatic, accommodations should be put in place immediately. If the symptoms do not resolve over a reasonable period of time, the team may want to consider a 504 Plan. If the educational needs are so significant and chronic that accommodations alone are no longer sufficient

and specialized instruction and modifications are required, then a special education evaluation should be considered.

9. At what point should an initial evaluation be conducted?

If the child/youth has not yet been discharged from the hospital or rehabilitation facility, the TBI specialist should maintain close contact with the family and medical team to determine a probable timeline for discharge. The team should consider initiating the special education evaluation process prior to discharge to assure a smooth transition from hospital to school, particularly if the student will require significant accommodations and/or special education services.

The educational team will want to avoid unnecessary duplication in the evaluation process, and should consider incorporating results and recommendations from therapy evaluations and the neuropsychological evaluation that is typically completed prior to discharge from the hospital.

Additional components of a special education evaluation could also be completed in a medical or home setting, such as observations of the student in an instructional or therapy session, a parent interview, and a file review. In such situations, anticipated needs in the school setting and the likelihood of ongoing changes during the recovery period will need to be taken into account.

10. How frequently should a student with a TBI be re-evaluated?

Since recovery from TBI can be sporadic and unpredictable, periodic re-evaluation is important in order to monitor progress, review instructional objectives, and revise programs. Rapid changes in many areas of the student's functioning during the first year after injury require more frequent evaluations to avoid basing intervention strategies and accommodations on outdated information. However, over-testing can also result in frustration for the student without significant results. Decisions regarding type and frequency of evaluations must be carefully considered by the team.

11. When conducting an evaluation of a student with a TBI, to what degree should standardized test results be used to measure a student's level of performance in the cognitive and academic areas?

The results of a comprehensive evaluation help to determine if a student requires special education services. While standardized testing is an important component of a comprehensive evaluation, it should not stand alone, and results should be interpreted carefully by professionals knowledgeable in TBI. Other evaluation methods may be equally or more valuable in creating a more comprehensive learner profile and identifying the needs of the student.

For students with TBI, it is important to note that standardized tests most often measure academic skills and information that were acquired prior to the student's injury. The assessment of these preserved abilities, although extremely important in establishing a complete profile of the student, may not fully reflect the student's impaired cognitive abilities. The results of standardized tests, when considered alone, may over-estimate the student's ability to function successfully in the classroom. Therefore, a comprehensive assessment should incorporate a variety of tools and methods, as well as information gained from observations of the student in the actual classroom setting and typical environments.

Service Delivery

12. Who should be the main contact at school?

The primary contact person may differ from school to school. In general, it is recommended that it be a staff person who is assigned to the school on a full time basis, such as the case manager, school nurse, speech/language clinician, school social worker, or school counselor. TBI specialists are often itinerant consultants assigned to multiple schools, and therefore may not be the best candidate. However, it is essential that the primary contact person understand the unique characteristics of TBI, and the special considerations required for a successful reintegration of the student from hospital/rehabilitation setting to

school. The school contact should maintain ongoing communication with the full team and the family to assist in identifying and meeting the unique needs of the student with a TBI.

13. How might a school district demonstrate that a teacher or other professional has competencies and knowledge in the area of traumatic brain injury?

Professional competencies in the area of TBI have been developed and are available for review on the Minnesota Low Incidence Projects website and in the Appendices section of this manual.

An individual who has met these competencies has:

- ❖ Attended workshops and staff development activities on the topic of TBI
- ❖ Demonstrated knowledge of TBI by accurately interpreting Minnesota definition and eligibility criteria
- ❖ Demonstrated understanding of recommended TBI evaluation tools, checklists, accommodations, educational strategies, instructional methods, and awareness of community resources

Appendices

Appendix A: Information Sheets

TBI Information Sheet

Executive Functions Information Sheet

MDE Fact Sheet: Birth to 4 Years

MDE Fact Sheet: Ages 5 to 12

MDE Fact Sheet: Teens

MN TBI Competencies for Educators

NOTE: Forms found in the Appendices section can also be downloaded from the MN Low Incidence Projects website as PDFs and/or electronic fillable forms.

Traumatic Brain Injury (TBI) Information Sheet

Incidence

The frequency of traumatic brain injury (TBI) in children and teens is staggering. Each year in the United States, approximately 40% of all traumatic brain injuries (TBI) happen to children.

- ❖ More than 60,000 children and adolescents are hospitalized annually with moderate to severe brain injuries.
- ❖ More than 630,000 children are seen for TBIs in hospital emergency rooms and released.
- ❖ Approximately 145,000 children aged 0–19 are currently living with long-lasting, significant alterations in social, behavioral, physical, and cognitive functioning following a TBI.

Because of shortened hospital stays and the chronic problems arising from childhood TBI, the primary service provider for children and adolescents with TBI has become schools. In 1990, TBI was added to federal special education law (IDEA) as an educational disability. Since then, local, regional, and state Department of Education (DOE) personnel have designed services attempting to meet these students' needs.

For children and youth, most traumatic brain injuries result from motor vehicle crashes, falls, sports, and abuse. Most injuries occur within the 15-24 year old age group, but the frequency is nearly as high for children 15 years of age.

Mild TBI or concussion, the most common of brain injuries, may occur with no loss of consciousness or noticeable physical injury. Persons with mild brain injuries/concussion may experience symptoms and impairments that are temporary or permanent. Unfortunately, many mild brain injuries go undiagnosed for weeks, months or even years after the injury, with symptoms ranging from mild to chronic or severe.

Moderate or severe TBI can result in long term impairment in one or more areas of functioning, and can be impacted by a number of variables, including age at the time of injury, type of injury, and location of the injury.

State Definition

Minnesota Rule 3525.1348 defines Traumatic Brain Injury as an acquired injury to the brain caused by an external physical force, resulting in total or partial functional disability and/or psycho-social impairment that may adversely affect a child's educational performance and result in the need for special education and related services.

The term 'traumatic brain injury' applies to open or closed head injuries resulting in impairments in one or more of the following areas: cognition, speech/language, memory, attention, reasoning, abstract thinking, judgment, problem-solving, perception, motor, and sensory abilities, psycho-social behavior, physical functions, and information processing. *The term does not apply to brain injuries that are congenital or degenerative, or brain injuries induced by birth trauma.*

Characteristics/Educational Implications

Generally speaking, traumatic brain injuries in children are often diffuse and can affect many areas and functions within the brain. Since areas of the brain are interconnected, damage to any part of the system can often result in cognitive, motor, sensory, emotional, and behavioral changes. Frontal and temporal lobe damage can often occur in a traumatic brain injury, and may result in possible changes in personality and behavior, as well as deficits in memory, judgment, reasoning, problem solving, and inhibition. Difficulties with perceptual skills and expressive language may also result. When damage occurs in other parts of the brain, there may be changes in motor or sensory functioning.

Myths/Common Misconceptions

A common misconception suggests that the degree of impairment generally correlates with the force of the impact. Although it is often true that symptoms from a mild brain injury or concussion might improve quickly, this may not always be the case. Diffuse damage to the brain can result from a mild brain injury, even when there is no loss of consciousness. In some situations, an injury that is considered 'mild' may result in long-term cognitive and/or behavioral problems- particularly if there is a history of past concussions. Chronic, long term impairment may result in the student requiring special education services.

Another misconception centers on the idea that young children's brains are more adaptable and pliant, therefore more resilient to the damaging effects of a brain injury. While young children may physically recover more quickly from serious accidents as compared to older youth and adults, the long-term cognitive deficits are often more pronounced. Generally speaking, the younger the child, the more profound the long-term effects will be. In addition, some deficits may not be apparent until later in childhood when specific developmental skills are required, such as executive function skills.

Possible Cognitive Changes Resulting from TBI:

- ❖ Short-term or long-term memory loss
- ❖ Slowed processing of information
- ❖ Impaired judgment
- ❖ Trouble concentrating or paying attention
- ❖ Difficulty keeping up with conversation; trouble finding words, speech difficulties
- ❖ Spatial disorientation
- ❖ Difficulty organizing or problem solving
- ❖ Inability to do more than one thing at a time

Possible Physical Changes Resulting from TBI:

- ❖ Seizures
- ❖ Fatigue, increased need for sleep
- ❖ Insomnia
- ❖ Sensory loss or impairment

- ❖ Blurred or double vision
- ❖ Headaches or migraines
- ❖ Trouble with balance and dizziness
- ❖ Decreased motor abilities
- ❖ Muscle control and balance problems
- ❖ Ringing in the ears
- ❖ Hormonal changes

Possible Emotional Changes Resulting from TBI:

- ❖ Depression, grief over loss of ability
- ❖ Anxiety, restlessness, agitation
- ❖ Lower tolerance for stress
- ❖ Irritability, frustration, impatience
- ❖ Mood swings
- ❖ Impulsiveness and lack of inhibition
- ❖ Emotional flatness and passivity

Possible Behavioral Changes Resulting from TBI:

Small Children

- ❖ Increased restlessness or fussiness
- ❖ Quieter than usual

- ❖ Becomes upset more easily than before
- ❖ Needs extra sleep
- ❖ Less energy
- ❖ Less interest in playing
- ❖ Clumsier than normal
- ❖ Loses speech or uses fewer words
- ❖ Less able to do physical tasks than before, i.e., self-feeding or toileting

Adolescents/Young Adults

- ❖ Forgets learned or new information; needs frequent repetitions
- ❖ Slowed performance in the classroom, i.e., problems with reading, writing, math
- ❖ Problems with organization, staying on task, remembering routine
- ❖ Difficulty with keeping track of time and/or belongings
More easily upset, agitated, or irritable
- ❖ Increased tiredness or fatigue, reduced interest in activities
- ❖ Headaches, dizziness or visual disturbances
- ❖ Difficulty dealing with peers and adults
- ❖ Increased impulsivity and/or poor judgment
- ❖ Onset of seizure activity/epilepsy

Following a Traumatic Brain Injury

After brain injury, individuals vary on how they adjust to the changes in their life. Persons who survive brain injury often find that things will never be the same. Fortunately, many school programs, rehabilitation and treatment programs can help persons with brain injury rebuild their lives and achieve more independence.

Accommodations and Modifications in the School Setting

Educational programming, accommodations, and modifications to curriculum, instruction, materials and equipment are individualized to meet the unique needs of students with TBI. Evaluation results will assist the team in identifying appropriate services, accommodations and modifications. Some examples include: environmental changes, use of technology to access the environment or complete written work, a modified grading system, support for transitions and organizational tasks, modified assignments, tests, memory aids, alternate response methods, opportunities for re-teaching and/or review, a behavior intervention plan, special transportation, accessible classrooms/restrooms, doorways, etc.

Sources:

Minnesota Low Incidence Projects: <http://www.mnlowincidenceprojects.org/tbi.html>

Minnesota Brain Injury Alliance: <http://www.braininjurymn.org>

National Institutes of Health: <http://nih.gov>

Executive Functions Information Sheet

Definition

Executive functions are hidden, unappreciated, and often misunderstood skills that are the foundation to successfully dealing with school demands. This set of skills represents a neurological construct which includes a collection of interrelated functions that are responsible for purposeful, goal directed, problem solving behavior. Our brain's frontal and prefrontal lobes are often referenced as the CEO of the brain. They are the skills that allow us to make a plan and then follow through with the execution.

Dr. Russell Barkley defines executive functions as actions we perform to ourselves and direct at ourselves so as to accomplish self-control as a part of goal directed behavior, and hopefully maximize our future outcomes as a result. *Dr. Tom Brown* likens the executive function of the brain to the function of a conductor of an orchestra. The conductor organizes various instruments to begin playing singularly or in combination, integrates the music by bringing in and fading certain actions, and controls their pace and level of intensity. Expecting someone with Executive Function Disorder to be organized would be the same as expecting a blind person to see all the information presented on the board.

The Developing Brain

The development of executive functions parallels the development of the prefrontal regions of the brain, a long process that begins to become more apparent in the middle elementary grades. Executive function develops slowly, likely related to the slow myelination of the frontal lobes. The frontal system is highly and reciprocally interconnected through bi-directional connections with the limbic (motivational) system, the reticular activating system (arousal), the posterior association cortex (perceptual/cognitive processes and knowledge base) and the motor regions of the frontal lobes (action). Frontal lobe development continues through adolescence and into the mid 20's. Executive functions become more apparent as higher level demands are placed on children, particularly during the adolescent and teen stages.

Executive Functions Allow Us To:

- ❖ Regulate attention and behavior to match environmental demands
- ❖ Organize our world and our thinking to make tasks easier to complete
- ❖ Demonstrate judgment and foresight
- ❖ Shift flexibly between competing activities/trains of thought
- ❖ Generalize learning to new situations
- ❖ Work automatically and efficiently
- ❖ Inhibit inappropriate responses

Impact on Learning

Executive functions enhance learning because they allow us to:

- ❖ Make plans
- ❖ Keep track of more than one thing at once
- ❖ Meaningfully integrate past knowledge
- ❖ Engage in group dynamics
- ❖ Evaluate ideas
- ❖ Reflect on our work
- ❖ Change our minds and make mid-course corrections while thinking, reading and writing
- ❖ Finish work on time, ask for help when needed, inhibit some responses, and seek more information

Impaired Executive Functions

When an individual has impaired executive functions, the effects can be far-reaching. Some typical symptoms or behaviors that might be seen include the following:

- ❖ Lacks foresight
- ❖ Poor hindsight/trouble learning from mistakes
- ❖ Poor organizational skills
- ❖ Disorganized sense of time
- ❖ Inability to utilize self-talk to work through problems
- ❖ Reads social skills poorly
- ❖ Poor internalization and generalization of rules
- ❖ Performs inconsistently at tasks or work
- ❖ Has trouble with transitions
- ❖ Feels hyper-focused at times
- ❖ Exhibits poor frustration tolerance
- ❖ Feeling overwhelmed frequently
- ❖ Exhibits hyper-responsiveness
- ❖ Reacts in inflexible or explosive ways
- ❖ Has trouble paying attention to others
- ❖ Has a sense of failure to achieve goals
- ❖ Has problems following a sequence of directions

Educational Strategies to Consider

Some strategies for the educational setting can include a variety of environmental, curricular and instructional accommodations. Some examples include:

- ❖ Clear the area of distractions and clutter
- ❖ Present material in a vibrant, animated and attention grabbing manner
- ❖ Establish eye contact and positive feedback when communicating with the student
- ❖ Tap on the desk or use another code to bring the child back into focus
- ❖ Alter the child's attention with directives such as "this is important."
- ❖ Break down longer directions into simpler chunks
- ❖ Consider task analysis when designing lessons or setting goals
- ❖ Frequently check for comprehension in subtle ways
- ❖ Encourage students to underline key words in directions
- ❖ Provide frequent opportunities for out-of-seat work and moving about
- ❖ Allow preferential seating
- ❖ Provide tools and instruction to put an organizational system in place; allow student to be part of the decision-making process
- ❖ Create structure for cues, reminders and guidelines, and customize as needed
- ❖ Help the student learn how to apply previously learned material to new situations and experiences
- ❖ Homework quantity and content should be matched to abilities and individually determined

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Brown, Thomas E. Attention Deficit Disorders and Comorbidities in Children, Adolescents and Adults. Washington D.C.: American Psychiatric Press, 2000.

Zeigler Dendy, Chris A. M.S., Teaching Teens with ADD and ADHD. Bethesda, MD: Woodbine House Inc. 2000

Jonathan Miller, Ph.D., LP. ABPP Workshop Presentations, 2005, 2006, 2007, 2010

Martin L. Kutscher M.D. , Kids in the Syndrome Mix Philadelphia, PA: Jessica Kingsley Publishers, 2005

Parker, Harvey C., Ph.D, Problem Solver Guide for Students with ADHD, Plantation Florida, Specialty Press, 2000

Website resources

Creating timelines:

www.ldonline.org

Creating calendars: www.scholastic.com/kids/homework/calendar.HTM

www.calendarsthatwork.com

Using video games to teach Executive Functions: www.learningworksforkids.com

Agency Resources

Minnesota Low Incidence Projects: <http://www.mnlowincidenceprojects.org/tbi.html>

Minnesota Brain Injury Alliance: <http://www.braininjurymn.org>

National Institutes of Health: <http://nih.gov>

Books

Promoting Executive Functions in the Classroom by Lynn Meltzer, 2000, Guilford Press

Executive Skills in Children and Adolescents by Peg Dawson and Richard Guare, 2004, Guilford Press

Smart by Scattered by Peg Dawson and Richard Guare, 2008, Guilford Press

(Rev 2013) Original document created by Regions 5/7 P/HD Network

MDE Fact Sheet: Traumatic Brain Injury in Children Birth to Four Years

Traumatic brain injury (TBI) is a serious public health problem in the United States. Each year, TBIs contribute to a substantial number of deaths and cases of permanent disability. Recent data shows that, on average, approximately half a million children (0-14) sustain a traumatic brain injury annually. This includes:

- ❖ 473,900 emergency department visits.
- ❖ 35,000 hospitalizations.
- ❖ 2,100 deaths.

(U.S. Department of Health and Human Services Centers for Disease Control and Prevention, “Traumatic Brain Injury in the United States 2002-2006”)

Children’s brain injuries are different

Research has shown that a child’s brain injury has a more severe effect than the same kind of injury on an adult. This is because children’s brains are still developing. Also, the effects of a child’s brain injury may only be apparent as the child gets older. Some children may have lifelong physical challenges. However, the greatest challenges many children with brain injury face are changes in their abilities to think, learn and behave.

Concussion in Infants, Toddlers and Preschool Children

Very young children may suffer bumps and bruises to their heads from falls, direct injuries, motor vehicle crashes, accidents or other causes including child abuse. Sometimes these can result in a concussion. Deciding when a child needs an immediate concussion assessment can be difficult. Young children may have the same concussion symptoms as older children, but they do not express them in the same way. For example, young children cannot

explain a feeling of nausea, amnesia or even describe where they hurt. When in doubt, get an immediate evaluation from a medical professional. At routine health checks your doctor should ask you about all your child's "bumps on the head" and should consider referring your child to the emergency department if they suspect a "bump on the head" might be a concussion.

Acute signs and symptoms of a concussion:

- ❖ Vomiting
- ❖ Headache
- ❖ Crying that can't be stopped
- ❖ Restlessness or irritability

Shaken Baby Syndrome (also known as Abusive Head Trauma)

Shaken Baby Syndrome (SBS) or Abusive Head Trauma (AHT) occurs when a parent or caregiver shakes a child so hard that the unsupported head moves about violently, causing damage to the brain and blood vessels as the brain repeatedly hits the skull.

Every day three to four children are victims of SBS with 20 percent of the cases proving fatal in the first few days after injury. SBS is the leading cause of child abuse death in the United States and it is 100 percent preventable. The majority of the survivors are left with disabilities including learning and behavioral disorders, profound mental and developmental delays, paralysis, blindness, inability to eat and permanent vegetative state.

Some caretakers do not report possible abuse because it is being inflicted by someone else without their knowledge or because they don't want to tell. In severe cases of SBS babies may exhibit:

- ❖ Unresponsiveness
- ❖ Loss of consciousness

- ❖ Breathing problems
- ❖ No pulse

Babies suffering lesser damage from SBS may exhibit:

- ❖ Change in sleeping pattern or inability to be awakened
- ❖ Vomiting
- ❖ Convulsions or seizures
- ❖ Irritability
- ❖ Uncontrollable crying
- ❖ Inability to be consoled
- ❖ Inability to nurse or eat

Prevention

To reduce the risk of a young child sustaining a TBI, family members and caregivers should:

- ❖ Buckle infants and children in the car using a child safety seat, booster seat, or seat belt according to the child's height, weight and age. Children should start using a booster seat when they outgrow their child safety seats, usually when they weigh about 40 pounds. Children should continue to ride in a booster seat until the lap and/or shoulder belts in the car fit properly, typically when they are approximately 4'9" tall.
- ❖ Make sure children wear helmets that are fitted properly.
- ❖ Use the right protective equipment and make sure it is maintained properly.
- ❖ Contact a friend, family member or community agency if you need emotional support and/or have concerns about the safety of your child.

- ❖ Make living areas safer for young children by:
 - o Installing window guards to prevent falls from open windows.
- ❖ Using safety gates at the top and bottom of stairs.
- ❖ Keeping stairs clear of clutter.
- ❖ Securing rugs and using rubber mats in bathtubs.
- ❖ Not allowing children to play on fire escapes and other unsafe platforms.
- ❖ Making sure playground surfaces are made of shock-absorbing materials, such as hardwood mulch or sand, and are maintained to an appropriate depth.

This fact sheet was collaboratively developed by the MN Department of Education and the MN Low Incidence Projects.

Resources Used in Developing this Fact Sheet

- ❖ MN Brain Injury Alliance: <http://www.braininjurymn.org>
(612) 378-2742 (800) 669-6442
- ❖ Department Of Health and Human Services, Centers for Disease Control and Prevention (CDC) <http://www.cdc.gov/TraumaticBrainInjury/index.html>

MDE Fact Sheet: Traumatic Brain Injury in the School-Aged Child: Ages 5-12

Traumatic brain injury (TBI) is a serious public health problem in the United States. Each year, TBIs contribute to a substantial number of deaths and cases of permanent disability. Recent data shows that, on average, approximately half a million children (0-14) sustain a traumatic brain injury annually. This includes:

- ❖ 473,900 emergency department visits
- ❖ 35,000 hospitalizations
- ❖ 2,100 deaths

(U.S. Department of Health and Human Services Centers for Disease Control and Prevention, “Traumatic Brain Injury in the United States 2002-2006”)

Causes

Major causes of brain injury include falls, motor vehicle crashes, sports-related concussions, diseases and family violence.

Symptoms

- ❖ Headache or “pressure” in head
- ❖ Nausea or vomiting
- ❖ Balance problems or dizziness
- ❖ Blurred or double vision
- ❖ Sensitivity to light

- ❖ Sensitivity to noise
- ❖ Feeling sluggish, hazy, foggy or groggy
- ❖ Difficulty concentrating
- ❖ Confusion

Children's brain injuries are different

Research shows that a child's brain injury has a more severe effect than an adult's injury. This is because a child's brain is still developing. Children's greatest challenges are changes in their abilities to think, learn and behave.

Concussion in Children

A concussion is a type of brain injury. It is caused by a bump, fall or blow to the head or body that causes the head and brain to move back and forth quickly. Not all concussions result in loss of consciousness. A concussion is most likely during activities where collisions can occur, such as physical education class, playground time or a sports activity. Approximately 1,300 U.S. children experience severe or fatal head trauma from child abuse every year.

Recognizing and responding to a possible concussion can prevent further injury and help with recovery. Children should NEVER return to sports/recreation activities on the day of the injury, and should delay a return to any physical activity until they are symptom-free and have their physician's clearance.

All children with concussion or suspected concussion should be followed closely by their doctor. A visit after the event allows the doctor to assess the child for ongoing symptoms and allows the family to ask questions and discussion of how to prevent future injury.

Return to School

When a child with TBI returns to school, her needs have often changed. The injury was sudden and traumatic. When she remembers her abilities before the injury, she may be frustrated, angry or sad. The family, friends and teachers often have difficulty adjusting their expectations.

Plan carefully for the student's return to school. The school will need to evaluate him thoroughly to determine his educational needs. Ask about accommodations from Section 504 of the Americans with Disabilities Act, as well as special education services (Individuals with Disabilities Education Act). This information is usually available from the school's principal or special education teacher.

Here are some suggestions:

- ❖ Learn as much as you can about TBI. Knowledge will help you and your child.
- ❖ Work with the medical team to understand your child's injury and treatment plan. Ask questions. Make suggestions.
- ❖ Keep track of your child's treatment. As your child recovers, you may meet with many doctors, nurses and others. Write down what they say. Put it and any paperwork the team gives you in a three-ring notebook or a box. If you are asked to share your paperwork with someone else, make a copy. Always keep the original.
- ❖ Talk to other parents whose children have a brain injury. You can share practical advice and emotional support. Check with the Brain Injury Association of Minnesota to find a parent group near you.

Prevention

To reduce the risk of a TBI, parents and caregivers should ensure that:

- ❖ Everyone wears a seat belt when riding in a motor vehicle.
- ❖ Children ride in booster seats until the lap and/or shoulder belts fit properly, typically when the child is 4'9" tall.

- ❖ Children wear helmets that are fitted properly.
- ❖ Children use and maintain the right protective equipment.
- ❖ A friend, family member or community agency is contacted if you need emotional support and/or have concerns about the safety of your child.
- ❖ Windows have guards to keep young children from falling out of open windows.
- ❖ Safety gates are at the top and bottom of stairs when young children are around.
- ❖ Stairs are clear of clutter.
- ❖ Rugs are taped down and rubber mats are used in bathtubs.
- ❖ Children do not play on fire escapes or other unsafe platforms.
- ❖ Playground surfaces are made of shock-absorbing materials, such as hardwood mulch or sand, and are maintained to an appropriate depth.

This fact sheet was collaboratively developed by the MN Department of Education and the MN Low Incidence Projects.

Resources Used in Developing this Fact Sheet

- ❖ MN Brain Injury Alliance: <http://www.braininjurymn.org>
(612) 378-2742 (800) 669-6442
- ❖ Department Of Health and Human Services, Centers for Disease Control and Prevention (CDC) <http://www.cdc.gov/TraumaticBrainInjury/index.html>

MDE Fact Sheet: Traumatic Brain Injury in Teens

Traumatic brain injury (TBI) is a serious public health problem in the United States. Each year, TBIs contribute to a substantial number of deaths and cases of permanent disability. Recent data shows that, on average, approximately half a million children (0-14) sustain a traumatic brain injury annually. This includes:

- ❖ 473,900 emergency department visits
- ❖ 35,000 hospitalizations
- ❖ 2,100 deaths

(U.S. Department of Health and Human Services Centers for Disease Control and Prevention, “Traumatic Brain Injury in the United States 2002-2006”)

Causes of Brain Injury in Teens

The causes of moderate/severe brain injury differ from pediatric and adult brain injury. The teenage years bring the special problems of peer pressure, underage drinking, abuse of alcohol and drugs, gang-related violence and inexperienced and/or impaired driving.

Concussion in Teens

A concussion is a type of brain injury that changes the way the brain works. It is caused by a bump, fall or blow to the head or body that causes the head and brain to move back and forth quickly. Not all concussions result in loss of consciousness, but they occur during activities where collisions can occur, such as physical education class or a sports activity. Approximately 1,300 U.S. children experience severe or fatal head trauma from child abuse every year. In any given season, 20 percent of high school contact sports players sustain a concussion. Among teenagers, brain injury is the most common injury in winter sports such as skiing, sledding, ice skating or ice hockey, accounting for 46 percent of all injuries.

Recognizing and responding to a possible concussion can prevent further injury and help with recovery. Teens should NEVER return to sports/recreation activities on the day of the injury, and should delay a return to any physical activity until they are symptom-free and have their physician's clearance. Teens that have experienced a suspected concussion should be followed closely by their doctors. A visit after the event allows the doctor to assess the teen for ongoing symptoms and allows the family to ask questions and discuss how to prevent future injury.

Symptoms

Symptoms can vary greatly depending on the extent and location of the injury. It may be years before their effects become apparent. A combination of early diagnosis and ongoing treatment is the best way to lessen the effects of a brain injury. Teens who display the symptoms listed below for several weeks after a concussion may require further assessment and/or evaluation by a neuropsychologist, neurologist, or other specialist:

- ❖ Headache.
- ❖ Nausea or vomiting.
- ❖ Balance problems or dizziness.
- ❖ Double or blurry vision.
- ❖ Sensitivity to light or noise.
- ❖ Feeling sluggish, hazy, foggy or groggy.
- ❖ Difficulty concentrating or remembering things.
- ❖ Confusion.
- ❖ Does not “feel right” or is “feeling down.”

Return to School

When teens with TBI return to school, their educational and emotional needs are often very different from their needs before the injury. The teens can often remember their abilities are different. They may remember their pre-injury abilities and activities. A sudden and traumatic injury has made significant physical, cognitive, emotional and social changes. Family, friends and teachers may have difficulty adjusting their expectations for the teen.

It is extremely important to plan carefully for return to school. Parents will want to find out ahead of time about accommodation plans (see Section 504 of the Americans with Disabilities Act) and special education services (see Individuals with Disabilities Education Act). This information is usually available from the school's principal or special education teacher. The school will need to evaluate the teen thoroughly to determine his or her educational needs. The Individualized Educational Program (IEP) is a flexible plan that can be changed as the parents, the school and the student learn more about what the student needs at school.

- ❖ The more you know about TBI, the more you can help your teen and yourself.
- ❖ Work with the medical team to understand your teen's injury and treatment plan. Ask questions. Tell the team what you know and think. Make suggestions.
- ❖ Keep track of your teen's treatment. A 3-ring binder or a box can help you store this history. As your child recovers, you may meet with many doctors, nurses and others. Write down what they say. Put any paperwork they give you in the notebook or keep it in the box. If you are asked to share your paperwork with someone else, make a copy. Don't give away your original.
- ❖ Talk to other parents whose children have sustained a brain injury. There are parent groups all over the U.S. You can share practical advice and emotional support. Check with the Brain Injury Association of Minnesota to find a parent group near you.

To reduce the risk of sustaining a TBI, teens should:

- ❖ Wear a seat belt every time they drive or ride in a motor vehicle; do not drive without supervision if inexperienced; do not speed.
- ❖ Wear helmets that are fitted properly; use the right protective equipment for sports and recreation, and make sure it is maintained properly.

- ❖ Avoid all use of drugs and alcohol.
- ❖ Avoid pedestrian injury by wearing reflective clothing at night.

To reduce the risk of TBI in teens, parents/community should:

- ❖ Provide a safe recreational and sports environment and adequate adult supervision.
- ❖ Seek help for your teen if you suspect drug or alcohol use or notice unexplained changes in behavior.
- ❖ Not allow your teen to drive alone or with friends if inexperienced.
- ❖ Talk with your teen about ways to solve arguments and fights without violence.

This fact sheet was collaboratively developed by the MN Department of Education and the MN Low Incidence Projects.

Resources used in developing this fact sheet:

- ❖ Minnesota Brain Injury Alliance: <http://www.braininjurymn.org>
(612) 378-2742; (800) 669-6442.
- ❖ Department Of Health and Human Services, Centers for Disease Control and Prevention (CDC) <http://www.cdc.gov/TraumaticBrainInjury/inex/html>

Minnesota Field Competencies for Special Education Teachers Working with Students with Traumatic Brain Injury (TBI)

Standard 1: FOUNDATIONS

KNOWLEDGE

- ❖ Current research, policies and issues that impact the growth, knowledge and practices in the field of special education as it relates to traumatic brain injury (TBI).
- ❖ Federal and State Definitions of Traumatic Brain Injury, Minnesota Rule 3525.1348 (Traumatic Brain Injury Criteria), and recommended practice in the field of Special Education specific to TBI.
- ❖ Incidence, causes, terminology, and types/degrees of injury.
- ❖ Differences in eligibility, methodology and educational programming when comparing TBI to other special education categories.

SKILLS

- ❖ Locate information regarding historical perspectives, research, and legal aspects through a variety of resources and tools.
- ❖ Define common medical and educational terminology related to TBI.
- ❖ Identify state and national incidence, trends, and causes of TBI.
- ❖ Define brain anatomy and functions, related implications for learners following injury, and long term effects of injuries.
- ❖ Identify common medical diagnostic tests and scales and their applications for determining recovery outcomes.
- ❖ Identify general patterns of dysfunction by location and type of brain injury.
- ❖ Distinguish between non-traumatic and traumatic brain injury, and identify similarities and differences in regard to evaluation, criteria, protocol and learner implications.

Standard 2: DEVELOPMENT AND CHARACTERISTICS OF LEARNERS

KNOWLEDGE

- ❖ Educational implications of different types and degrees of brain injury, and age of onset.
- ❖ Awareness of healthcare issues that may accompany a TBI.

SKILLS

- ❖ Identify learning issues unique to students with TBI.
- ❖ Define characteristics of mild, moderate and severe brain injury; general patterns of dysfunction by location and type of injury; and age of onset.
- ❖ Identify potential changes resulting from TBI in the areas of cognition, language, motor, sensory, physical, and social/behavior domains.
- ❖ Recognize common healthcare issues, including medications

Standard 3: INDIVIDUAL LEARNING DIFFERENCES

KNOWLEDGE

- ❖ Effects of age and pre-existing disabilities at the time of injury on recovery and learning.
- ❖ Differences and similarities between learner characteristics of TBI and other special education categories.
- ❖ Integration of individual learning differences related to TBI into educational programming and expectations.

SKILLS

- ❖ Integrate knowledge of individual learning differences into educational programming and expectations.
- ❖ Recognize common secondary health care issues that may occur as result of a TBI.

Standard 4: INSTRUCTIONAL STRATEGIES

KNOWLEDGE

- ❖ Instructional practices, curricula, strategies and adaptations necessary to accommodate characteristics of individuals with TBI.

SKILLS

- ❖ Adapt, modify, or structure the environment and/or curriculum based on an understanding of TBI and the individual needs of the learner.
- ❖ Identify strategies to promote positive attention processes, memory, and organization skills, including remediation and compensation strategies.
- ❖ Identify and communicate the student's strengths and needs, and how they impact learning and behavior.

Standard 5: LEARNING ENVIRONMENTS AND SOCIAL INTERACTIONS

KNOWLEDGE

- ❖ Behavior intervention strategies that are research-based and have been proven successful for learners with TBI.
- ❖ Characteristics of TBI and potential impact on personality, social communication skills, and behavior.

SKILLS

- ❖ Identify strategies that promote positive interpersonal interactions.
- ❖ Demonstrate methods required to define and evaluate behaviors that interfere with learning.
- ❖ Identify behavior intervention strategies that reflect antecedent management.

Standard 6: LANGUAGE

KNOWLEDGE

- ❖ Potential effects of TBI on language-related learning and social/communication skills.
- ❖ Impact of assistive technology on learning.

SKILLS

- ❖ As a team, identify remediation and/or compensation strategies for language deficits.
- ❖ As a team, identify a range of assistive technology options for students with TBI.

Standard 7: INSTRUCTIONAL PLANNING

KNOWLEDGE

- ❖ Promising practices in the area of TBI as they relate to individual education plan (IEP) development, integration of related services, collaborative teaming, and learner implications.

SKILLS

- ❖ Develop an IEP that reflects the unique needs of a student with a TBI, including short-range goals and frequent review schedule.
- ❖ Monitor and adjust educational expectations related to the student's present level of performance.
- ❖ Utilize specific record keeping and data collection methods to document student progress.
- ❖ Assist in the development of an individual health plan (IHP), emergency procedures and/or emergency evacuation plan, as needed.

Standard 8: EVALUATION

KNOWLEDGE

- ❖ Special education evaluation components for a student with TBI.
- ❖ Understanding of evaluation reports completed by outside agencies/individuals as they relate to the special education evaluation process (e.g. neuropsychological evaluations).
- ❖ Tools and protocols commonly used to evaluate students with TBI.

SKILLS

- ❖ Proficient with informal criterion-referenced and standardized evaluation tools commonly used with students with TBI.
- ❖ Demonstrate observation and interviewing skills as they relate to the student evaluation process.
- ❖ Write a comprehensive evaluation summary that may include information from other agency evaluations and addresses learner implications related to TBI and educational programming.
- ❖ Apply evaluation results to TBI eligibility criteria for qualification process.

Standard 9: PROFESSIONAL AND ETHICAL PRACTICE

KNOWLEDGE

- ❖ Professional resources in the area of TBI.

SKILLS

- ❖ Participate in continuing professional development in the field of TBI.

Standard 10: COLLABORATION

KNOWLEDGE

- ❖ Hospital discharge planning process, reintegration to school, and agency/team member roles.
- ❖ Local and state agencies and resources that provide services for students with TBI and their families.

SKILLS

- ❖ Communicate with all team members, including outside agencies when appropriate, to assure effective collaboration and teamwork as they relate to educational programming.
- ❖ As the identified school contact person, attend the discharge planning conference and/or speak directly with treating physician and therapists to obtain the medical information needed for a smooth school reintegration process.
- ❖ Explain state TBI criteria, evaluation process, school policies, and procedures to medical personnel as part of the reintegration process.
- ❖ Provide in-service training and resources on TBI to other school personnel, classmates, and families.

Appendices

Appendix B: Strategies, Supports & Accommodations

Instructional Strategies & Environmental Supports

Adolescents: Common Behaviors and Strategies Chart

Accommodations & Modifications Checklists for Educational Settings

Early Childhood Setting

Elementary Setting

Secondary Setting

NOTE: Forms found in the Appendices section can also be downloaded from the MN Low Incidence Projects website as PDFs and/or electronic fillable forms.

Instructional Strategies, Environmental Supports & Accommodations

The following instructional strategies and environmental supports align with the categories identified in the TBI Checklist, which can be found in Appendix C.

A. Orientation and Attention to Activities

Observable Behaviors

- ❖ Confused with time (day, date), place (current location) and personal information (birth date, address, phone, schedule)
- ❖ Often seems “in a fog” or confused
- ❖ Stares blankly
- ❖ Appears sleepy, or fatigues easily
- ❖ Fails to finish tasks or activities
- ❖ Has difficulty concentrating or paying attention
- ❖ Daydreams or gets lost in thoughts
- ❖ Inattentive, easily distracted

Instructional Strategies, Accommodations & Supports

- ❖ Adjust assignments to accommodate the current ability of the student to attend to tasks.
- ❖ Allow extended time for assignments/tests.
- ❖ Use clearly defined objectives that are meaningful to the student.
- ❖ Use short, concise instructions and clear assignment expectations.

Appendix B: Strategies, Supports & Accommodations

- ❖ Incorporate novel, relevant, stimulating and interactive activities to engage student learning, maintain focus, and promote heightened attention to tasks.
- ❖ When demonstrating a new task, repeat instructions, and have student restate.
- ❖ Be alert for attention drifts and redirect student's attention to task. Gradually increase expectations for on-task behavior by lengthening intervals of time for which the student receives reinforcement. (social praise, tangibles)
- ❖ Explore a variety of cueing systems. (verbal, gestural, signs)
- ❖ Use verbal instructional strategies such as embedding questions within a lesson, directing attention to the topic, linking the discussion to the student's personal experiences, etc.
- ❖ Reward on-task behavior; use redirection (and avoid negative consequences) for distractible behavior.
- ❖ Redirect undesirable behavior by focusing the student's attention on an alternative activity to break the pattern of disruptive or perseverative responses. Note: Do not use this technique if student's behavior is attention seeking.
- ❖ Closely monitor the time of day, medications and appearance of mental fatigue and/or attending behavior concerns. Consult with the family to bring concerns to their physician's attention, and offer to provide observational data to support such concerns.

Environmental Supports

- ❖ Provide an uncluttered, quiet environment.
- ❖ Remove unnecessary distractions.
- ❖ Initially limit background noise; gradually increase to normal levels as tolerated.
- ❖ Maintain consistent staff, setting and materials arrangement.
- ❖ Identify permanent landmarks and teach the student to use these as guides.
- ❖ Allow the student alternate passing time to avoid confusion and excessive hallway noise.

Appendix B: Strategies, Supports & Accommodations

- ❖ Utilize a buddy system to assist the student with navigating around the school.
- ❖ Establish a quiet area and specified times for breaks to minimize the effects of physical or mental fatigue and diminished stamina.

Visual Supports

- ❖ Provide printed schedules, picture charts and environmental maps that outline classroom or schedule routines. Review with student initially, and as needed throughout the day.
- ❖ Label significant objects or areas. Provide nametags for staff.
- ❖ Provide visual cues for behavioral expectations, such as symbols or discrete signs on the student's desk with cue words such as LOOK or LISTEN. Point to sign/symbol as reminder.
- ❖ Provide visual examples of a new task or routine.

B. Starting, Changing and Maintaining Activities

Observable Behaviors

- ❖ Shows confusion or requires prompts about where, how, or when to begin assignment
- ❖ Doesn't know how to maintain conversation (doesn't contribute, walks away)
- ❖ Confused or agitated when moving from one activity, place, or group to another
- ❖ Stops mid task (math problem, worksheets, story, or conversation)
- ❖ Unable to stop or perseverates on inappropriate topics or behaviors
- ❖ Gives up quickly on challenging tasks

Instructional Strategies, Accommodations & Supports

- ❖ Begin the day by reviewing the schedule and noting any changes in the routine.
- ❖ Prepare the student in advance for daily transitions with advance reminders for the next activity.
- ❖ 'Walk through' or model transitions with the student.
- ❖ Encourage the student to refer to printed/pictorial schedules, and review any changes in activities, materials or locations on a daily basis.
- ❖ Remind the student to observe peers to see what they're doing during transitions.
- ❖ Provide clear, concise explanations for assignments, using both auditory and visual means. Relate expectations to functional/everyday activities whenever possible.
- ❖ Review behavioral expectations before beginning a task. (Look at the board, listen to the speaker, raise your hand when you have a question)
- ❖ Review printed/pictorial descriptions and provide multiple examples to help the student better understand what is expected.

Appendix B: Strategies, Supports & Accommodations

- ❖ Praise the student for beginning a task, and provide encouragement to continue the task until completion (while maintaining realistic expectations of what the student can achieve.) Remind the student they are capable of completing the task.
- ❖ Provide the student with a list of steps to complete a task, and ask that they check off completed items as a visual of where they are in the process.
- ❖ Provide clear expectations for task completion, and allow sufficient time and adequate resources/support for success.
- ❖ Establish closure routines to assist the student in understanding when a task/work session is completed. (turn papers in, clean up materials)

C. Taking in and Retaining Information

Observable Behaviors

- ❖ Forgets things that happened, even during the same day
- ❖ Has problems learning or remembering new concepts, facts, or information
- ❖ Cannot remember simple instructions or rules
- ❖ Forgets classroom materials, assignments, and deadlines
- ❖ Forgets information learned from day to day (may do well on short quizzes, but fails tests covering several weeks of learning)
- ❖ Performs better on test items that rely on recognition (multiple choice) as compared to recall (open answer)

Instructional Strategies, Accommodations & Supports

- ❖ Provide a printed/pictorial schedule of daily activities, locations and needed materials.
- ❖ Use a multi-sensory approach to allow the student to employ different learning modes.
- ❖ Utilize material that is both purposeful and significant to the student. Link new learning to previously learned information.
- ❖ Pre-teach and reteach material. Frequently summarize and review information being presented to reinforce previously learned concepts.
- ❖ Limit the amount of information or 'chunk' the information being presented to facilitate the student's ability to retain/recall material.
- ❖ Incorporate visual and/or auditory supports and cues to reinforce verbal information.
- ❖ Encourage the student to video or audio record information being presented if helpful.

Appendix B: Strategies, Supports & Accommodations

- ❖ Provide a hard copy of notes, power-points, outlines and study guides. Encourage the student to highlight key information, or assist them in doing so.
- ❖ Encourage the student to establish a routine for recording assignments and course expectation through use of a paper or electronic daily planner, phone or tablet apps, etc.
- ❖ Include multiple choice, visual cues or pictures on worksheets and in tests. Minimize the number of choices being presented.
- ❖ Teach compensatory strategies for recalling words and information through the use of visual imagery, “chunking” of information, association techniques, mnemonic devices, etc.
- ❖ Use role-play techniques to encourage recall of details such as who, what, when, and where. Encourage the student to act out/role play a response.
- ❖ Encourage the student to share personal information or stories that is relevant to the task, which will make the task more personally relevant.

D. Language Comprehension and Expression

Observable Behaviors

- ❖ Confused with idioms (“climbing the walls”) or slang
- ❖ Unable to recall word meaning or altered meaning (homonym or homographs)
- ❖ Unable to comprehend or breakdown instructions and requests
- ❖ Difficulty understanding “Wh” questions: who, what, where, when, and why
- ❖ Difficulty understanding complex or lengthy discussions
- ❖ Processes information at a slow pace
- ❖ Has word finding difficulties (may describe but not label)
- ❖ Stammers or slurs words
- ❖ Difficulty expressing ideas fluently (speech disjointed, stops mid-sentence)

Instructional Strategies, Accommodations & Supports

- ❖ Teach the student to ask for clarification or for information to be given at a slower rate.
- ❖ Use pictures or written words as part of providing a direction. For example, use a picture of a chair and the written word ‘sit’ to encourage the student to sit in his chair.
- ❖ Pair manual signs, gestures, or pictures with verbal information.
- ❖ Physically model directions. If the student is to collect papers and put them in a designated spot, demonstrate how this should be done.
- ❖ Use cognitive mapping. Diagram ideas in order of importance or sequence to clarify content graphically. This helps students to see part-whole relationships.

Appendix B: Strategies, Supports & Accommodations

- ❖ Limit the amount of information presented. Give the student instructions or other verbal information in appropriately small chunks or units. Avoid abstract words or concepts.
- ❖ Present verbal information at a relatively slow pace with appropriate pauses for processing time and with repetition if necessary.
- ❖ Limit the amount of extraneous or background noise when auditory comprehension is critical.
- ❖ State information in concrete terms. Use pictures or visual symbols if necessary.
- ❖ Have the student sit close to the teacher with an unobstructed view.
- ❖ To ensure comprehension, teach the student to ask questions about the instructions or materials presented, or request slower or repeated presentations.

E. Visual-Perceptual Processing

Observable Behaviors

- ❖ Cannot track when reading, skips problems, or neglects a portion of a page
- ❖ Orients body or materials in unusual positions when reading or writing
- ❖ Gets lost in halls and cannot follow maps or graphs
- ❖ Shows left-right confusion

Instructional Strategies, Accommodations & Supports

- ❖ Describe the visual instructional material in concrete terms.
- ❖ Provide longer viewing times or repeat viewings when using visual instructional materials.
- ❖ Facilitate a systematic approach to reading by covering parts of the page.
- ❖ Place arrows or cue words left to right on the page to orient the student to space. Teach the student to use the cues systematically to scan left to right.
- ❖ Provide large print books or use e-books.
- ❖ Move the student closer to visual materials or have the materials enlarged.
- ❖ Place materials within the student's best visual field. Consult with school specialists about possible visual-perceptual problems.

F. Visual-Motor Skills

Observable Behaviors

- ❖ Difficulty copying information from the board
- ❖ Difficulty with note-taking
- ❖ Difficulty with letter formation, spacing or alignment
- ❖ Slow, inefficient motor output
- ❖ Poor motor dexterity (cutting, drawing)

Instructional Strategies, Accommodations & Supports

- ❖ Consider using computers or electronic devices for writing assignments, or completing assignments and projects through alternate means. (presentation, PowerPoint, slide show, poster, audio-recording, etc.) If using devices with keyboards, provide keyboard training or voice recognition software training.
- ❖ Use customized paper for writing purposes. (larger, raised lines, colored lines, graph paper)
- ❖ Provide visual clues for beginning and end of lines. Place a green dot in the left margin and a red dot in the right margin.
- ❖ Younger students: If not able to do handwriting worksheets with peers, practice letter or shape formation using materials appropriate for muscle strength and endurance. For example, writing with fingers can be done with finger paint, crazy foam, shaving cream, or sand trays. More resistance is offered by writing with a pencil in a clay tray.
- ❖ Cursive handwriting may be inappropriate for a student with limited endurance and stability (cursive requires a sustained, fluid motion, while manuscript allows for frequent breaks and repositioning). Students should be taught to read cursive but be allowed to continue to write in manuscript or use a computer or electronic device.
- ❖ The student may benefit from extra time to complete written tests and assignments.

Appendix B: Strategies, Supports & Accommodations

- ❖ Alter the length of written responses. Permit the student to write shorter compositions than classmates, or demonstrate understanding of concepts through alternative means.
- ❖ Allow the student underline answers on worksheets rather than copying them onto a blank space.
- ❖ Allow the student answer questions in one or two words rather than a complete sentence.
- ❖ Because of issues related to processing, positioning and head movement, far point copying may not be appropriate for some students. Provide a near-point model at the student's desk. A vertical paper holder may be useful to hold the model in front of the student.
- ❖ Some students are not able to copy the same amount of notes or text as peers. Provide alternative means for note-taking, such as e-pens, peer note-takers, audio or video recording, copies of the teacher's notes, etc.
- ❖ Older students often are responsible for note-taking as a means of accessing supplemental textbook information. This may present more difficulties to the student with a disability than mere copying. Refer to the above alternative note-taking options.
- ❖ When handwriting modifications such as those listed above have not been successful, alternative means of written communication may need to be considered. Among these are laptop word processors, computers, and calculators. Familiarity with keyboards should be encouraged at an early age.
- ❖ Depending upon the severity of the condition, adaptive equipment and software may be needed to facilitate use of the keyboard. Expanded keyboards, scanners, and voice recognition software may also be considered.
- ❖ While alternatives to writing may improve legibility and accuracy, they will not necessarily increase speed. It may still be necessary to provide the student with more time to complete written assignments.
- ❖ Allow student to write or highlight in textbooks, consider using commercially available highlight tape, or use e-texts with highlight options.
- ❖ Provide student with an extra set of textbooks to keep at home if e-books are not available.

G. Sequential Processing

Observable Behaviors

- ❖ Difficulty with sequential steps of task (getting out materials, turning to page, starting an assignment)
- ❖ Confuses the sequence of events or other time-related concepts

Instructional Strategies, Accommodations & Supports

- ❖ Limit the number of steps in a task.
- ❖ Present part of a sequence and have the student finish it.
- ❖ Show or discuss one step of the sequence at a time in the assignment.
- ❖ Provide general cues with each step: “What should you do first? What should you do second?”
- ❖ Have student repeat multi-step directions before attempting a task.
- ❖ Provide pictures or a written sequence of steps to remember: Tape a cue card to the desk with words or pictures of materials needed for a lesson, then expand original written directions in a series of simple, one step directions.
- ❖ Tell student how many steps are in a task: “I’m going to tell you three things to do.” Provide a visual, such as holding up three fingers.
- ❖ Offer examples to demonstrate how to proceed through parts of a worksheet.
- ❖ Number the steps in written directions and have the student cross off each step as it is completed.
- ❖ Teach the student to refer to directions and/or look at what other peers are doing if they are unsure of the task.

H. Problem Solving, Reasoning, and Generalization

Observable Behaviors

- ❖ Fails to consider alternatives when first attempt fails
- ❖ Does not use compensatory strategies
- ❖ Has problems understanding abstract concepts
- ❖ Confusion with cause-effect relationships
- ❖ Unable to categorize
- ❖ Problems making inferences or drawing conclusions
- ❖ Can state facts but cannot integrate or synthesize information
- ❖ Difficulty applying what is known in different or new situations

Instructional Strategies, Accommodations & Supports

- ❖ Teach the structure or format of a task. For larger projects or assignments, discuss the interrelationship between the smaller parts and the end product.
- ❖ Change the format of the task or role play, helping the student to generalize the skill to different situations. For example, ask the student solve mathematics facts on a worksheet as well as on flash cards; or creating lists for different purposes.
- ❖ Provide completed sample worksheets in a notebook, serving as models for a completed assignment.
- ❖ Demonstrate how skills can be used throughout the day. Discuss how the student relies on the clock or a schedule to get up in the morning, begin school, or catch a bus.
- ❖ Develop a problem solving guide to help the student through the stages of problem solving. For example, identify the problem; acquire relevant information for solving the problem; generate several possible solutions; list pros and cons for each solution; identify the best solution; create a plan of action; evaluate the effectiveness of the plan. Raise questions about alternatives and consequences.

Appendix B: Strategies, Supports & Accommodations

- ❖ Allow the student to bring up relevant real-life problems that are appropriate for group discussion. Promote brain-storming about alternative solutions and their usefulness.
- ❖ Introduce roadblocks and complications to enhance “detouring” skills and to encourage flexibility.
- ❖ Provide ongoing, non-judgmental feedback.
- ❖ Provide concrete dialogue.
- ❖ Be certain that expectations are clear and well understood.
- ❖ Ask the student to explain his/her understanding of what he/she has just heard or understands regarding a situation.
- ❖ Rephrase oral communication if student does not understand.

I. Organization and Planning Skills

Observable Behaviors

- ❖ Difficulty breaking down complex tasks (term papers, projects)
- ❖ Problems organizing materials
- ❖ Problems distinguishing between important and unimportant information
- ❖ Difficulty making plans and setting goals
- ❖ Difficulty following through with and monitoring plans
- ❖ Sets unrealistic goals

Instructional Strategies, Accommodations & Supports

- ❖ Attempt to limit impulsive responses by encouraging the student to take 'thinking time' before he/she answers.
- ❖ Have the student organize information by using categories or main idea/supporting details (e.g., who, what, when, where). This strategy can be used in an expanded form to write a story.
- ❖ Teach student a sequence of steps to aid in verbal organization. Have the student use cue cards with written pictured steps when formulating an answer.
- ❖ Limit the number of steps in a task, and focus on one type of information at a time.
- ❖ Decrease rambling by encouraging the student to verbally express a thought in one sentence.
- ❖ Provide part of a sequence and have the student finish it.
- ❖ Give cues to expand a line of thought in an organized manner, such as, "Good. Now what would you do?"
- ❖ Structure thinking processes graphically, such as with time lines, outlines, flow charts, graphs, etc.

J. Impulse or Self-Control

Observable Behaviors

- ❖ Blurts out in class
- ❖ Makes unrelated statements or responses
- ❖ Acts impulsively
- ❖ Displays dangerous behavior
- ❖ Disturbs other pupils

Instructional Strategies, Accommodations & Supports

- ❖ Place unnecessary materials out of sight or out of reach.
- ❖ Discuss rules and their importance at the beginning of the lesson.
- ❖ Explain how the student's impulsive acts (such as calling out) disturb others.
- ❖ Role-play appropriate responses (e.g., raising hand). Place a sign on the student's desk with a picture of a hand and point to this when the student interrupts.
- ❖ Employ 'stop-action' techniques. Immediately stop the student from disrupting an activity, encourage him or her to verbalize an alternative behavior, and have the student follow through appropriately.
- ❖ Provide breaks to stretch, get a drink of water, run an errand, etc.
- ❖ Provide time at the end of a class period for the student to tell personal stories or jokes.
- ❖ Assure the student that he or she has sufficient time to complete tasks and need not hurry. If needed, break a large task down into smaller tasks
- ❖ Recognize that the student will have difficulty taking turns and sharing, waiting their turn, etc. Try to alleviate those situations when possible, and provide techniques for reducing stress.

K. Social Adjustment and Awareness

Observable Behaviors

- ❖ Acts immature for age
- ❖ Overly dependent on adults
- ❖ Too bossy or submissive with peers
- ❖ Peculiar manners and mannerisms (stands too close, interrupts, unusually loud, poor hygiene)
- ❖ Has difficulty understanding age-appropriate social humor
- ❖ Fails to correctly interpret nonverbal social cues
- ❖ Difficulty understanding the feelings and perspective of others
- ❖ Does not understand own strengths, weaknesses, and self-presentation
- ❖ Does not know when help is required or how to get assistance
- ❖ Denies any problems or changes resulting from injury

Instructional Strategies, Accommodations & Supports

- ❖ Assist in increasing the student's awareness of what he or she is able to do. Expand capabilities by gradually adding steps of increasing difficulty
- ❖ Encourage the student to recognize when help is needed and how to best access help from others in an appropriate manner.
- ❖ Attach cue cards to the student's desk ("Raise hand for help.")
- ❖ Decrease daydreaming that results from an inability to proceed by asking direct questions or by providing cue cards. "Are you stuck?" or "Is that clear?"
- ❖ Model desired behavior. Role-play situations to assist in problem-solving.

Appendix B: Strategies, Supports & Accommodations

- ❖ Review directions or sample items; Provide a written sequence to follow and thus circumvent memory problems and anxiety.
- ❖ Assure the student that he or she can complete the task.
- ❖ Select only a portion of the task or short assignments to be completed independently.
- ❖ Consider backward chaining to increase feelings of success by having the student successfully complete the final step in a series of sub-tasks. Add steps by gradually chaining back to the first step.
- ❖ Provide additional time for the student who works or processes slowly to complete tasks.

L. Emotional Adjustment

Observable Behaviors

- ❖ Easily frustrated by tasks or if demands not immediately met
- ❖ Becomes argumentative, aggressive, or destructive with little provocation
- ❖ Cries or laughs too easily
- ❖ Feels worthless or inferior
- ❖ Withdrawn, does not get involved with others
- ❖ Becomes angry or defensive when confronted with changes resulting from injury
- ❖ Apathetic and disinterested in friends or activities
- ❖ Makes frequent inappropriate sexual comments, gestures, or actions
- ❖ Unhappy or depressed affect
- ❖ Exhibits nervous, self-conscious, or anxious behavior

Instructional Strategies, Accommodations & Supports

- ❖ Emphasize what the individual can do and point out the progress that has been made.
- ❖ Compare recent past and present work.
- ❖ Chart achievement of goals to emphasize progress and build self-confidence.
- ❖ Limit perseverative behavior by using verbal directions (e.g., “Erase only once”) or by focusing attention on less threatening or more socially appropriate tasks.

M. Sensorimotor Skills

Observable Behaviors

- ❖ Identified problems with smell, taste, touch, hearing, or vision
- ❖ Problems with visual acuity, blurring, or tracking
- ❖ Problems with tactile sensitivity (e.g., can't type or play an instrument without watching hands)
- ❖ Identified problems with oral-motor, fine motor, or gross motor skills
- ❖ Poor sense of body in space (e.g., loses balance, negotiating obstacles)
- ❖ Demonstrates motor paralysis or weakness of one or both sides
- ❖ Problems with motor rigidity (limited range of motion), spasticity (contractions), or ataxia (erratic movements)
- ❖ Difficulty with functional motor activities, such as self-care activities, moving about

Environmental Accommodations & Supports

- ❖ Building site should include ramps or level spaces to allow the student in a wheelchair easy access to entering/exiting the building. A fire/emergency exit plan should be established with necessary modifications.
- ❖ Ramps should have a slope of one foot length per inch of rise. A level space of at least three feet must be available for resting at each 30 foot interval of ramp.
- ❖ Walkways should allow safe mobility in a wheelchair from bus to building.
- ❖ Students should open doors independently if possible. A physical therapist can provide consultation on these and other related gross motor/ambulation tasks.
- ❖ Restrooms should be accessible. This may require the use of toilet rails, wider stalls, raised toilet seats, and more space for maneuverability.

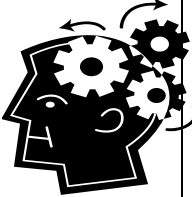


Appendix B: Strategies, Supports & Accommodations

- ❖ A student in a wheelchair should be able to reach the paper towel dispenser, trash can, soap dispenser, and sink. Pipes under the sink should be insulated if a student in a wheelchair is using the sink.
- ❖ A water fountain or sink with disposable cups should be accessible in the area of the student's class.
- ❖ A public telephone should be accessible if it is available for other students.
- ❖ Lockers should be accessible to the student in a wheelchair. Height of the locker depends on the student's size, balance, and flexibility. Consider using commercially available adjustable locker shelving. It is helpful to have a locker where student is, as much as possible, in the same area of the building. Locks with keys or push-button locks may be better than combination locks for some students.
- ❖ Seat belts, car seats, and/or harnesses should be provided on a school bus. If the student needs a seat belt or harness and can otherwise ride a regular bus, the transportation department can equip the bus to be used with a seat belt or harness. The bus driver should discharge/pick up student at a location that provides maximum independence for the student. A curb or stationary step may be used to assist the student who has difficulty climbing steps. Getting on and off the bus in a safe manner is required, at the same time recognizing the need for maximum independence.
- ❖ The student may need individualized adult support on a field trip. This may be the parent, a volunteer, or an aide from the school. School administration should become involved if these individuals are not available. The site of a field trip should be studied prior to the trip to determine any possible problems (e.g. accessibility of bathrooms, terrain, distance).
- ❖ If a student will be unable to walk the entire distance included on a trip and he/she does not have a wheelchair or other mode of mobility, securing a wheelchair for the day can be a temporary solution.
- ❖ Classroom should be set up so the student can easily move to his/her desk, teacher's desk, and other settings or environments.
- ❖ Secondary classes should be scheduled with as little distance between classes or movement between floors as possible.
- ❖ The student may need to leave class early to get to his/her next class and avoid crowded halls.




Appendix B: Strategies, Supports & Accommodations

- ❖ A basket may be added to the side of a student's wheelchair or to his/her walker to carry books and materials. A backpack is helpful for some ambulatory students or a buddy may need to carry his/her books.
- ❖ Use a table of the correct height where forearms comfortably rest flat on the table when sitting erect.
- ❖ Use only the necessary amount of side and back support.
- ❖ If a belt is necessary, use it around the pelvis so that it doesn't impair breathing.
- ❖ Support the student's feet so that the hips and knees are at a 90-degree angle.
- ❖ Prevent incorrect positioning, such as knees crossed.
- ❖ The trunk and head should be as straight as possible.
- ❖ If a student has an unusual grip on a pencil, do not immediately try to change his/her grip. This grip may be a reflection of unstable positioning. Children will often use a tight grip on a pencil or pen as a means of gaining postural stability.
- ❖ Pencil grips may be useful with some students to provide pencil stability. Commercial grips can be purchased. They can also be made from clay, Plaster of Paris, masking tape, or rubber bands.
- ❖ The writing utensil affects the quality of written work equally as much as the skill in executing the various handwriting strokes. When selecting a writing instrument, keep in mind that a pencil or crayon requires the most physical strength because they provide the most resistance. If you see that a student is having difficulty using these instruments, try having him or her write with a flair or ballpoint pen, which provides less resistance.
- ❖ Tape or secure paper to desk, or use dycem to prevent paper from sliding on desk surface

Adolescents with TBI: Commonly Observed Behaviors and Possible Strategies

Behavior	Definition	Examples of Behavior	Strategies
<p>Impulsivity</p> 	<p>Acts on impulse instead of thoughts</p> <p>Difficult to filter immediate reactions</p> <p>Little regard to consequences of the behavior</p>	<p>Verbal and physical outbursts</p> <p>Poor boundaries with others</p> <p>Socially inappropriate reactions or comments to others</p> <p>Difficulties with food /beverage limits</p> <p>Difficulties following financial budget</p>	<p>Provide structure, modify environment</p> <p>Planning ahead for events, role-play situations</p> <p>Reviewing expectations</p> <p>Supervision</p> <p>Providing written or verbal cues</p> <p>Limiting options</p> <p>Setting short-term goals</p> <p>Timeouts</p> <p>Positive feedback for appropriate behavior</p> <p>Stop and Think cue</p>
<p>Lack of Initiation</p> 	<p>Difficulty starting and/or completing tasks</p> <p>Getting stuck are starting a task-Can appear to be disorganized or unmotivated</p>	<p>Difficulties with tasks such as: personal care routines, ADL's, homework, household tasks, etc.</p> <p>Difficulties with social interactions / communication skills</p>	<p>Establishing schedules, checklists, calendars, etc.</p> <p>Break tasks into small steps</p> <p>Establish and maintain consistent routine</p> <p>Attainable reinforcement programs</p> <p>Identifying and building off success</p> <p>Positive feedback</p> <p>Slowly increase accountability</p> <p>Provide triggers/cues to begin tasks</p>
<p>Distractibility</p> 	<p>Short attention span</p> <p>Difficulty sustaining attentiveness</p> <p>Difficulty focusing on one item at a time</p> <p>Inability to filter out external stimuli</p>	<p>Stopping conversation in mid-sentence</p> <p>Focusing on background sounds</p> <p>Focusing on a particular object/ item/person with difficulty redirecting</p>	<p>Modify environment to minimize sudden changes</p> <p>Limit possible external distractions</p> <p>Focusing on one task at a time</p> <p>Setting short-term goals / Break things into small amounts of time</p> <p>Provide positive feedback</p> <p>Stop and Think cue</p>

Appendix B: Strategies, Supports & Accommodations

<p style="text-align: center;">Difficulties with Relationships</p> 	<p>Difficulty forming and maintaining peer relationships</p> <p>Difficulty with social interactions, lack of self-awareness</p>	<p>Personality traits and difficulty interacting with others who may have personality traits that are similar or completely opposite.</p> <p>Poor social skills.</p> <p>Poor personal space.</p> <p>Difficulty knowing how to interact with others in a socially appropriate manner</p>	<p>Structured social group either within school or an agency working on peer interaction and basic social skills</p> <p>School working to set up activities</p> <p>Involving young people in team athletics to increase teamwork</p> <p>Role playing general skills</p> <p>Modeling social skills during activities</p>
<p style="text-align: center;">Coping Skills</p> 	<p>Difficulty managing and working through emotions</p> <p>Reacting impulsively on feelings</p>	<p>Anger/stress management</p> <p>Time Management</p> <p>Emotional expression</p> <p>Understanding how to react in a way that is socially acceptable.</p>	<p>Teaching relaxation techniques</p> <p>Utilizing things around the individual's space and environment that can assist with being overwhelmed or anxious</p> <p>General body awareness (i.e. Engine level) model</p> <p>Use of feeling cards/pictures/and individual's cues</p>
<p style="text-align: center;">Independence & Responsibility Issues</p> 	<p>Assisting an individual in being realistic of challenges</p> <p>Working with an individual to learn basic steps towards being independent</p>	<p>Difficulty grasping a full understanding of the steps it takes to be independent.</p> <p>Safety and vulnerability.</p> <p>Setting personal priorities.</p> <p>Slow progress is okay and typical of transitioning.</p>	<p>Working with parents and caregivers to support the individual; however, not do things for the individual</p> <p>Working on understanding basic skills for independent living</p> <p>Setting up checklists and daily routines</p> <p>Normalizing the struggle to be independent</p> <p>Modeling and role playing skills</p> <p>Clearly outline consequences that may accompany the lack of routine</p>

(Document provided courtesy of Courage Kenny Rehabilitation Institute)

Accommodations and Modifications Checklists for the Early Childhood, Elementary and Secondary Educational Settings

The following checklists for the early childhood, elementary and secondary educational settings are designed as tools to provide educators with a list of appropriate accommodations and/or modifications for the student with traumatic brain injury. These lists are not intended to be reflective of all possible accommodations or modifications, but should be considered as a starting point for team discussion and consideration. Accommodations should be reviewed periodically and revised to reflect any changes in the student's performance in the school environment.

- I. TBI Accommodations & Modifications Checklist: *Early Childhood Educational Setting*
- II. TBI Accommodations & Modifications Checklist: *Elementary Educational Setting*
- III. TBI Accommodations & Modifications Checklist: *Secondary Educational Setting*

TBI Accommodations & Modifications Checklist: *Early Childhood Educational Setting*

TBI Accommodations & Modifications Checklist: *Early Childhood Setting*

Student: _____ Teacher: _____ Today's Date: _____
 Birth Date: _____ Date of Injury: _____
 Presenting Concerns: _____

The Environment

- Post class rules (pictures & words)
- Post daily schedule (pictures & words)
- Give preferential seating
- Adjust schedule (most difficult in morning) to needs/strength
- Minimize sensory distractions (visual, auditory, olfactory)
- Modify length of school day
- Provide sensory breaks
- Provide place for quiet time
- Maintain consistent schedule
- Establish routine for transition
- Position student appropriately
- Teach positive rules for use of space
- Provide accessible environment/free of clutter
- Other: _____

Presentation of tasks

- Customize tasks to ability level
- Design tasks to increase likelihood of student success
- Allow extra time/support for tasks
- Give pictorial directions
- Provide visual of expectation
- Model tasks
- Provide clear/concise directions
- Repeat directions
- Increase active participation
- Incorporate memory strategies
- Other: _____

Instructional support

- Teacher circulate around room
- Provide immediate feedback
- Link tasks to previous learning
- Use manipulative materials
- Teach to current level of ability (use easier materials)
- Preteach/Reteach
- Repeat tasks/steps
- Use simple sentences
- Use individualized instruction
- Pause frequently
- Use cooperative learning
- Provide immediate/frequent feedback to reinforce correct response
- Other: _____

Behavioral Needs

- Model expected behavior
- Give non-verbal cues to address behavioral concerns
- Identify behavior concerns
- Reinforce positive behavior
- Use consistent response to behavior
- Help student identify feelings/emotions
- Learn to recognize signs of stress
- Teach skills to cope with stress
- Provide opportunity to role play positive behaviors
- Talk through challenging situations
- Use proactive behavior management strategies
- Other: _____

Social Skills/Interactions

- Provide structured play experiences
- Create opportunities to promote social interaction
- Focus on the social process, not the outcome
- Practice greetings and other typical social interactions
- Utilize cooperative learning groups
- Model appropriate sharing/turn taking

Assistive Technology Options

- Adaptive paper
- Magnetic words, letters, phrases
- Multimedia software
- Picture/symbol supported software
- Accessibility options on computer
- Keyboard key guard/ alternative keyboards
- Tablet/touch devices
- Voice output communication device
- Portable word processor
- Enlarged text/magnifiers
- Audio books
- Other: _____

Home/School Links

- Schedule team regular meetings to review progress/maintain consistency
- Encourage parent involvement
- Schedule parent conferences as needed
- Send home daily/weekly reports
- Provide home visits to facilitate continuity between home/school

Disability Awareness

- Help student understand/accept strengths/challenges
- Explain disabilities to other students
- Teach peers how to be helpful
- Provide in-service training to staff

Resources/Team Members

- Parents
- Classroom teacher
- Early childhood special education teacher
- TBI specialist
- Occupational therapy
- Physical therapy
- Speech/Language specialist
- School psychologist
- Relevant medical professionals

TBI Accommodations & Modifications Checklist: *Elementary Educational Setting*

TBI Accommodations & Modifications Checklist: *Elementary Educational Setting*

Student: _____ Teacher: _____ Today's Date: _____
 Birth Date: _____ Date of Injury: _____
 Presenting Concerns: _____

The Environment

- Post class rules (pictures & words)
- Post daily schedule (pictures & words)
- Provide preferential seating
- Adjust schedule (more difficult classes or activities when student is at peak performance during the day)
- Minimize sensory distractions (visual, auditory, olfactory)
- Modify length of school day/activities
- Provide sensory breaks
- Provide place for quiet time
- Maintain consistent schedule
- Establish routine for transition
- Assure that student is positioned appropriately
- Teach positive rules for use of space
- Provide accessible environment/free of clutter
- Other: _____

Presentation of tasks

- Customize tasks to ability level
- Design tasks to increase likelihood of student success
- Allow extra time/support for tasks
- Give pictorial directions
- Provide visual of expectation
- Model tasks
- Provide clear/concise directions
- Repeat directions
- Increase active participation
- Incorporate memory strategies
- Other: _____

Instructional support

- Teacher circulate around room
- Provide immediate feedback
- Link tasks to previous learning
- Use manipulative materials
- Teach to current level of ability; provide opportunities for success
- Preteach/Reteach
- Repeat tasks/steps
- Use simple sentences
- Use individualized instruction
- Pause frequently
- Use cooperative learning
- Provide immediate/frequent feedback to reinforce correct response
- Other: _____

Behavioral Needs

- Model expected behavior
- Give non-verbal cues to address behavioral concerns
- Identify behavior concerns
- Reinforce positive behavior
- Use consistent response to behavior
- Help student identify feelings/emotions
- Learn to recognize signs of stress
- Teach skills to cope with stress
- Provide opportunity to role play positive behaviors
- Talk through challenging situations
- Use proactive behavior management strategies
- Other: _____

Social Skills/Interactions

- Provide supported peer group/social experiences
- Create opportunities to promote social interaction
- Focus on the social process, not the outcome
- Practice greetings, conversational skills and other social interactions
- Utilize cooperative learning groups
- Model appropriate sharing/turn taking

Assistive Technology Options

- Adaptive paper
- Magnetic words, letters, phrases
- Multimedia software
- Picture/symbol supported software
- Accessibility options on computer
- Keyboard key guard/ alternative keyboards
- Tablet/touch devices
- Voice output communication device
- Portable word processor
- Enlarged text/magnifiers
- Audio books or e-books
- Other: _____

Home/School Links

- Schedule regular team meetings to review progress/maintain consistency
- Encourage parent involvement
- Schedule parent conferences as needed
- Send home daily/weekly reports
- Identify a primary contact person at school for the family to connect with

Disability Awareness

- Help student understand/accept strengths/challenges
- Explain disabilities to other students
- Teach peers how to be helpful
- Provide in-service training to staff

Resources/Team Members

- Parents
- Classroom teacher(s)
- TBI specialist
- School nurse
- DAPE teacher
- Paraprofessional
- Occupational therapy
- Physical therapy
- Speech/Language specialist
- School psychologist
- Principal
- Other: _____

TBI Accommodations & Modifications Checklist: Secondary Educational Setting

TBI Accommodations & Modifications Checklist: *Secondary Educational Setting*

Student: _____ Teacher: _____ Today's Date: _____
 Birth Date: _____ Date of Injury: _____
 Presenting Concerns: _____

The Environment

- Provide accessible environment (elevator, earlier hallway passing time)
- Copy of daily schedule, classes
- Provide preferential seating
- Adjust schedule (more difficult classes or activities when student is at peak performance during the day)
- Minimize sensory distractions (visual, auditory, olfactory)
- Modify length of school day/activities
- Provide sensory breaks
- Provide place for quiet time
- Maintain consistent schedule
- Establish routine for transition
- Assure that student is positioned appropriately
- Teach positive rules for use of space
- Provide accessible environment/free of clutter
- Other: _____

Presentation of tasks

- Customize tasks to ability level
- Design tasks to increase likelihood of student success
- Allow extra time/support for tasks
- Identify clear expectations
- Model tasks
- Provide clear/concise directions
- Repeat directions
- Increase active participation
- Incorporate memory strategies
- Other: _____

Instructional support

- Teacher circulate around room
- Provide immediate feedback
- Link tasks to previous learning
- Take courses that are relevant and of high interest to the student
- Teach to current level of ability; provide opportunities for success
- Pre-teach/Reteach
- Repeat tasks/steps
- Use individualized instruction
- Pause frequently
- Use cooperative learning
- Provide immediate/frequent feedback to reinforce correct response
- Other: _____

Behavioral Needs

- Model expected behavior
- Give non-verbal cues to address behavioral concerns
- Identify behavior concerns
- Reinforce positive behavior
- Use consistent response to behavior
- Help student identify feelings/emotions
- Learn to recognize signs of stress
- Teach skills to cope with stress
- Provide opportunity to role play positive behaviors
- Talk through challenging situations
- Use proactive behavior management strategies
- Other: _____

Social Skills/Interactions

- Instruction on higher level conversational skills, developing & maintaining friendships

Assistive Technology Options

- Adaptive paper
- Magnetic words, letters, phrases
- Multimedia software
- Picture/symbol supported software
- Accessibility options on computer
- Keyboard key guard/ alternative keyboards
- Tablet/touch devices
- Voice output communication device
- Portable word processor
- Enlarged text/magnifiers
- Audio books or e-books
- Other: _____

Post-Secondary Transition

- Identify vocational interests and skills
- Align courses with vocational interests
- Meet with Rehab Service counselor
- Identify accommodations needed for college entrance exams
- Provide instruction in area of job skills such as interviews, applications.
- Identify potential post-secondary programs that align with career interests
- Explore community resources and financial supports
- Other: _____

Home/School Links

- Schedule regular team meetings & conferences to review progress, maintain consistency
- Require student involvement
- Encourage parent involvement
- Provide updates to student and family as needed
- Identify a primary contact person at school for the family to connect with

Disability Awareness/Self-Advocacy

- Help student understand/accept strengths/challenges, and share with teachers or employer
- Help student explain disabilities to other students
- Provide in-service training to staff

Resources/Team Members

- Parents
- Classroom teacher(s)
- TBI specialist
- School nurse
- DAPE teacher
- Paraprofessional
- Occupational therapy
- Physical therapy
- Speech/Language specialist
- School psychologist
- Principal
- Other: _____

Appendices

Appendix C: Forms & Checklists

TBI Checklist

TBI Observation/Interview Form

MDE TBI Criteria Checklist

School Checklist: Return to School Following a Mild TBI/Concussion

TBI Medical Documentation Form

TBI School Re-Entry Form: Following Extended
Hospitalization/Rehabilitation

ACE (Acute Concussion Evaluation) Form

CDC Concussion Signs & Symptoms Checklist

NOTE: Forms found in the Appendices section can also be downloaded from the MN Low Incidence Projects website as PDFs and/or electronic fillable forms.

Traumatic Brain Injury Checklist

Trained, licensed and knowledgeable school staff such as a TBI specialist should carefully review the information obtained from this checklist. The following steps will assist in evaluating and interpreting the results.

1. Using the rating scale shown on the first page, the individual completing the checklist is asked to respond to each of the items by checking the column which best reflects the student's status. When scoring the results, the numbers are tallied for each category, and a corresponding score and percentage is calculated (see scoring sheet). Results from one or more raters can be tabulated, either individually or mathematically averaged.
2. When analyzing the tallied responses for each category, the most points possible (number on the bottom) represents the most severe and frequent occurrences of the behavior. By comparing the student's total points per category to this number and then calculating a percentage, the relative significance of the problem may be determined. A student who receives a score of 40% or more of the possible points may have a significant problem in that particular area depending upon analysis of the behaviors involved. For example, in the first section (Orientation and Attention to Activity) the total possible score is 24. If a student receives 10 or more points in this section, this total section score could be considered significant in terms of educational need for the student being evaluated. When summarizing and sharing results, consider the classroom or specific environment where the student was observed, the time of day, and the expectations of the setting and the staff.
3. Computed percentages can be plotted and displayed on the accompanying graph. This data can be visually presented in two ways: Individual percentages for each category by multiple respondents; or Averaged percentages. It should be noted that the TBI Checklist is not normed or standardized as an evaluation instrument.

Traumatic Brain Injury Checklist

Name of Student: _____ DOB: _____

Name and Role/Title of Individual Completing Form: _____

Date(s) Completed: _____ Time of Day: _____

Directions: Please rate the student's behavior (in comparison to same-age classmates) for the listed categories.

0	1	2	3	Numbers are for scoring purposes only. Please indicate frequency of each behavior by marking an X in the appropriate column.
Not at all	Occasionally	Often	Very Often	
A. Orientation and Attention to Activity				
				1. Confused with time (day of week or date), daily routine, and/or personal information (birthdate/age, address, phone, schedule)
				2. Seems to be "in a fog"
				3. Stares blankly
				4. Appears sleepy or is easily fatigued
				5. Fails to finish things
				6. Difficulty concentrating or paying attention
				7. Daydreams or gets lost in thoughts
				8. Inattentive, easily distracted
				Comments:

0	1	2	3	Numbers are for scoring purposes only. Please indicate frequency of each behavior by marking an X in the appropriate column.
Not at all	Occasionally	Often	Very Often	
B. Starting, Changing and Maintaining Activities				
				1. Confused or requires prompts about where, how or when to begin assignment
				2. Does not know how to initiate or maintain conversation
				3. Confused or agitated when moving from one activity, place, or group to another
				4. Stops mid-task (math problem, worksheets, story, or conversation)
				5. Perseverates on certain topics or behaviors
				6. Gives up quickly on challenging tasks
				Comments:
C. Absorbing and Retaining Information				
				1. Forgets things that happened recently or on the same day
				2. Problems with learning new concepts, facts or information
				3. Cannot remember simple instructions or rules
				4. Forgets classroom materials, assignments, and deadlines
				5. Forgets information learned from day to day (may do well on daily work, but performs poorly on tests covering several weeks of learning)
				Comments:

0	1	2	3	Numbers are for scoring purposes only. Please indicate frequency of each behavior by marking an X in the appropriate column.
Not at all	Occasional	Often	Very Often	
D. Language Comprehension and Expression				
				1. Confused with idioms (“climbing the walls”) or slang
				2. Unable to recall word meaning or altered meaning (homonyms or homographs)
				3. Difficulty with understanding instructions and/or requesting help
				4. Difficulty understanding complex or lengthy discussions
				5. Processes information at a slow pace
				6. Difficulty finding specific words (may describe but not label)
				7. Stammers or slurs words
				8. Difficulty fluently expressing ideas (speech disjointed, stops midsentence)
				Comments:

0	1	2	3	Numbers are for scoring purposes only. Please indicate frequency of each behavior by marking an X in the appropriate column.
Not at all	Occasionally	Often	Very Often	
E. Visual-Perceptual Processing				
				1. Cannot track when reading, skips problems, or neglects a portion of a page of written material
				2. Orients body or materials in unusual positions when reading or writing
				3. Gets lost in halls, cannot follow maps or graphs
				4. Shows left-right confusion
				Comments:
F. Visual-motor Skills				
				1. Difficulty copying information from board
				2. Difficulty with note-taking
				3. Difficulty with letter formation or spacing
				4. Slow, inefficient motor output
				5. Poor motor dexterity (cutting, drawing)
				Comments:
G. Sequential Processing				
				1. Difficulty with sequential steps of task (getting out materials, turning to a specific page, starting an assignment)
				2. Confuses the sequence of events or other time-related concepts
				Comments:

0	1	2	3	Numbers are for scoring purposes only. Please indicate frequency of each behavior by marking an X in the appropriate column.
Not at all	Occasionally	Often	Very Often	
				H. Problem-Solving, Reasoning, and Generalization
				1. Does not consider alternatives when first attempt fails
				2. Does not use compensatory strategies
				3. Has problems understanding abstract concepts
				4. Confusion with cause-effect relationships
				5. Difficulty categorizing objects or concepts
				6. Problems making inferences or drawing conclusions
				7. Can state facts, but cannot integrate or synthesize information
				8. Difficulty applying already learned knowledge to new or different situations
				Comments:
				I. Organization and Planning Skills
				1. Difficulty breaking down complex tasks into more manageable chunks (projects)
				2. Problems organizing materials
				3. Problems distinguishing between important and less important information
				4. Difficulty making plans and setting goals
				5. Difficulty following through and monitoring plans
				6. Sets unrealistic goals
				Comments:
				<i>J. Impulse Control</i>
				1. Blurts out in class
				2. Makes unrelated statements or responses
				3. Acts without thinking (leaves class, throws things, sets off alarms)
				4. Displays dangerous behavior
				5. Disturbs other students
				6. Makes inappropriate or offensive remarks
				7. Shows compulsive habits (nail biting, tapping)
				8. Hyperactive behavior; difficulty sitting for typical periods of time
				Comments:

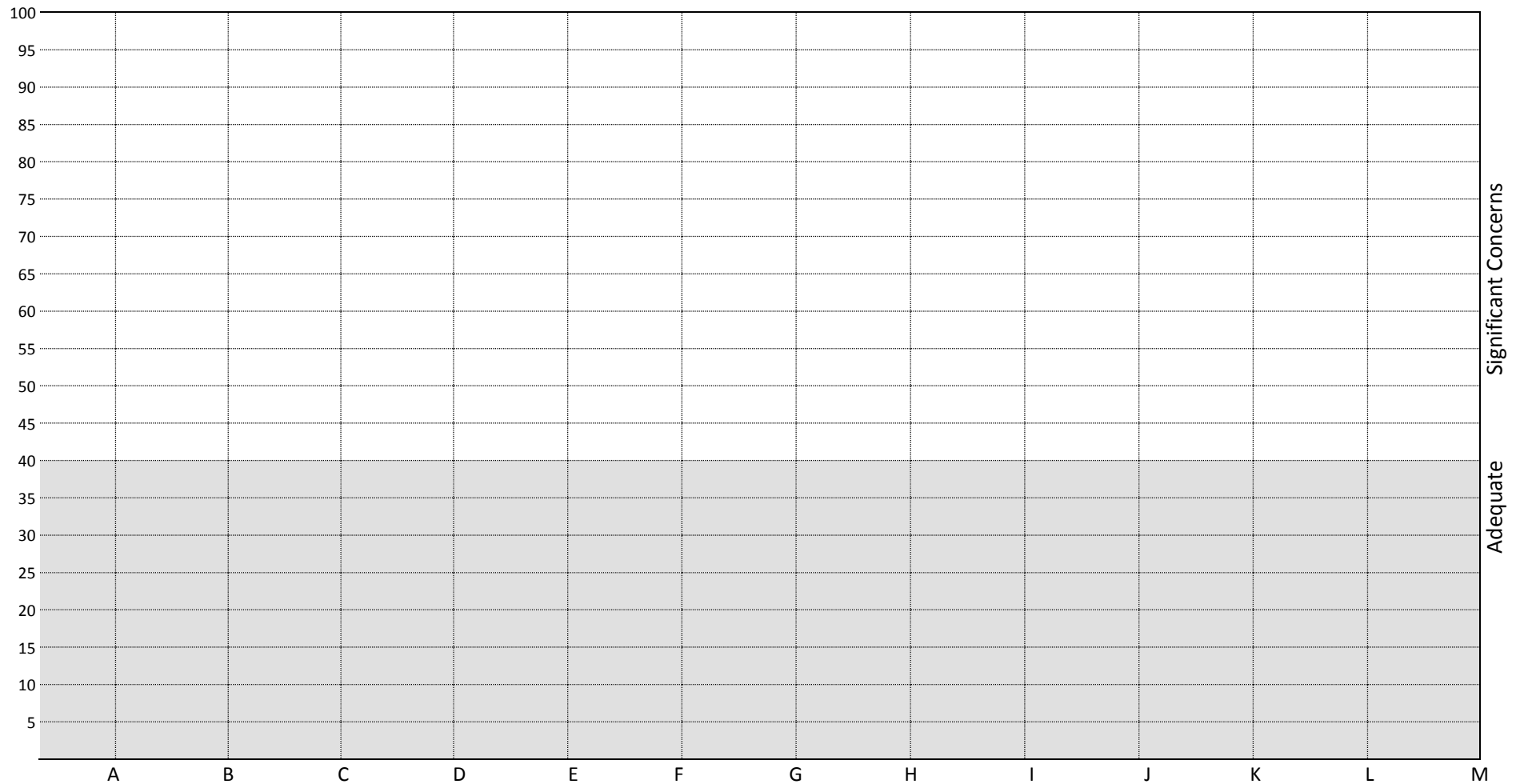
0	1	2	3	Numbers are for scoring purposes only. Please indicate frequency of each behavior by marking an X in the appropriate column.
Not at all	Occasionally	Often	Very Often	
K. Social Adjustment and Awareness				
				1. Acts socially immature for age
				2. Overly dependent on adults
				3. Too bossy or submissive with peers
				4. Peculiar manners/mannerisms (stands too close, interrupts, unusually loud)
				5. Difficulty understanding social humor
				6. Difficulty with interpreting nonverbal social cues
				7. Difficulty understanding the feelings and perspective of others
				8. Does not understand own strengths or needs
				9. Does not know when help is required or how to get assistance
				10. Denies any problems or changes resulting from TBI
				Comments:
L. Emotional Adjustment				
				1. Easily frustrated by tasks or if demands not immediately met
				2. Becomes argumentative, aggressive, or destructive with little provocation
				3. Cries or laughs too easily
				4. Feels worthless or inferior
				5. Withdrawn, does not get involved with others
				6. Becomes angry or defensive when confronted with changes resulting from TBI
				7. Apathetic and/or disinterested in friends or activities
				8. Makes inappropriate sexual comments and gestures to others
				9. Unhappy or depressed affect
				10. Nervous, self-conscious, or anxious behavior
				Comments:

0	1	2	3	Numbers are for scoring purposes only. Please indicate frequency of each behavior by marking an X in the appropriate column.
Not at all	Occasionally	Often	Very Often	
M. Sensorimotor Skills				
				1. Problems with smell, taste, touch, hearing and/or vision
				2. Problems with visual acuity, blurring or tracking
				3. Tactile hypersensitivity (dislikes certain textures or tactile experiences)
				4. Problems with oral motor abilities (e.g., swallowing) or fine motor/gross motor skills
				5. Poor sense of body in space (loses balance, difficulty negotiating around obstacles)
				6. Motor paralysis or weakness on one or both sides
				7. Motor rigidity (limited range of motion), spasticity (contractions) and/or ataxia (erratic movements)
				8. Difficulty with self-care activities (dressing, eating)
				Comments:
				Additional/General Comments About Student:

Traumatic Brain Injury Checklist: Summary Score Sheet

Category	40% Reference	Rater 1		Rater 2		Rater 3		Rater 4		Rater 5		Average	
			%		%		%		%		%		%
A. Orientation and Attention to Activity	9.6	/ 24		/ 24		/ 24		/ 24		/ 24		/ 24	
B. Starting, Changing and Maintaining Activities	7.2	/ 18		/ 18		/ 18		/ 18		/ 18		/ 18	
C. Absorbing and Retaining Information	6	/ 15		/ 15		/ 15		/ 15		/ 15		/ 15	
D. Language Comprehension and Expression	9.6	/ 24		/ 24		/ 24		/ 24		/ 24		/ 24	
E. Visual-Perceptual Processing	4.8	/ 12		/ 12		/ 12		/ 12		/ 12		/ 12	
F. Visual-motor Skills	6	/ 15		/ 15		/ 15		/ 15		/ 15		/ 15	
G. Sequential Processing	2.4	/ 6		/ 6		/ 6		/ 6		/ 6		/ 6	
H. Problem-Solving, Reasoning, and Generalization	9.6	/ 24		/ 24		/ 24		/ 24		/ 24		/ 24	
I. Organization and Planning Skills	7.2	/ 18		/ 18		/ 18		/ 18		/ 18		/ 18	
J. Impulse or Self-Control	9.6	/ 24		/ 24		/ 24		/ 24		/ 24		/ 24	
K. Social Adjustment and Awareness	12	/ 30		/ 30		/ 30		/ 30		/ 30		/ 30	
L. Emotional Adjustment	12	/ 30		/ 30		/ 30		/ 30		/ 30		/ 30	
M. Sensorimotor Skills	9.6	/ 24		/ 24		/ 24		/ 24		/ 24		/ 24	

Appendix C: Forms & Checklists



<p>A. Orientation and Attention to Activity</p> <p>B. Starting, Changing and Maintaining Activities</p> <p>C. Absorbing and Retaining Information</p> <p>D. Language Comprehension and Expression</p> <p>E. Visual-Perceptual Processing</p> <p>F. Visual-motor Skills</p> <p>G. Sequential Processing</p>	<p>H. Problem-Solving, Reasoning, and Generalization</p> <p>I. Organization and Planning Skills</p> <p>J. Impulse or Self-Control</p> <p>K. Social Adjustment and Awareness</p> <p>L. Emotional Adjustment</p> <p>M. Sensorimotor Skills</p>	<p>Raters:</p> <p>1. _____</p> <p>2. _____</p> <p>3. _____</p> <p>4. _____</p> <p>5. _____</p>
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Appendix C: Forms & Checklists

TBI Student Observation/Interview Form

(An electronic version of this form can be found on the MN Low Incidence Projects website.)

Student's Name _____ DOB _____ School _____
Interview Date _____ Observation Date(s) _____
Person(s) Interviewed _____ Observation Setting _____
Completed by _____ Completed by _____
Title _____ Title _____

Note: Of the information gathered in the interview, star [*] behaviors actually observed.

Current Health Status

- ❖ Staff/Student Knowledge of Diagnosis:
- ❖ Medication:
- ❖ Health Plan:
- ❖ Emergency/Safety Procedures:
- ❖ Attendance
- ❖ Comments:

Organization Skills (Document significant discrepancies from peers)

- ❖ Materials: (Has materials when needed, physical organization of space)
- ❖ Written Work: (Organized on page in sequential manner)
- ❖ Thoughts: (Tells thoughts of stories sequentially--beginning, middle, and end--stays on topic)
- ❖ Comments:

Appendix C: Forms & Checklists

Study Skills

- ❖ Self-Initiates:
- ❖ Displays On-Task Behavior:
- ❖ Follows Directions:
- ❖ Completes Homework:
- ❖ Participates in Group Activities:
- ❖ Comments:

Work Completion

- ❖ Number of assignments given _____
- ❖ Assignments turned in _____
- ❖ Assignments late _____
- ❖ Comments:

Level of Independence

- ❖ Work Completion: (Unassisted, adult assisted, peer assisted)
- ❖ Movement Throughout School Environment:
- ❖ Clothing/Bathroom/Lunchroom:
- ❖ Motoric Management of Materials: (Books, notes, pencil, scissors, desk, locker)
- ❖ Level of Self-Advocacy:

Appendix C: Forms & Checklists

Functional Level of Academic Performance

(Daily classroom performance in relation to peers)

- ❖ Reading:
- ❖ Math:
- ❖ Written Language:
- ❖ Other:

Peer Interaction

- ❖ Student with Peers:
- ❖ Peers with Student:

Interfering Behaviors

- ❖ Distracting to Self or Others:
- ❖ Aggressive Behavior:

Main Concerns/Strengths

- ❖ Parents:
- ❖ General Education Teacher/Other Staff:

Appendix C: Forms & Checklists

This electronic form can be found on the MN Low Incidence Projects website.



Traumatic Brain Injury

Student Name: _____

DODOB: _____

Building: _____

Reviewer Name: _____

Date of Evaluation Report: _____

Eligible: ___ Yes ___ No

___ Evaluation⇒ (Must meet initial criteria)

___ Reevaluation⇒ (Must address criteria components)

Based on information in the Evaluation Report and the student file, the student must meet the requirements in all FIVE areas below. The determination must be made by a multidisciplinary team and supported by information collected from multiple settings and sources.

A. Medical Documentation

___ There is documentation by a physician of a medically verified traumatic brain injury.

B. Functional Impairment

The student's file must include documentation of a functional impairment attributed to the TBI that adversely affects education performance in at least one of the following:

___ intellectual-cognitive

___ sensory

___ academic

___ social-emotional-behavioral

___ motor

___ functional skills-adaptive behavior

___ communication

C. Previously Existing Conditions

Verification that the student's impairments are not primarily the result of previously existing conditions. Indicate that none of the following contribute to a previously existing condition.

___ visual, hearing, motor impairments

___ developmental disabilities

___ environmental or economic disadvantage

- emotional/behavioral disorders
- language or specific learning disabilities

D. Documentation

The student file must include documentation of functional impairment through at least one of the following:

- checklists
- classroom or work samples
- documented, systematic behavioral observations
- educational/medical history
- interviews with parent, student, and other knowledgeable individuals

E. Documentation

The student's file must include documentation of functional impairment based on at least one of the following:

- criterion-referenced measures
- personality or projective measures
- sociometric measures
- standardized assessment measures (academic, cognitive, communication, neuropsychological, or motor)

Review of Eligibility Determination

To determine compliance with eligibility determination, one of the following **MUST** be checked.

- The documentation supports the team decision.
- The documentation does not support the team decision.

For complete information regarding disability criteria requirements, refer to Minnesota Rule 3525.1348

Minnesota Department
of Education
1500 Highway 36 West, MN 55113-4266
651-582-8200 | TTY: 651-582-8201
education.state.mn.us

School Checklist: Return to School Following a Mild TBI/Concussion

(Electronic Fillable forms are available on the MN Low Incidence Projects website.)

Student Name: _____ **School/Grade:** _____

Parent/Guardian Name: _____ **Date of Injury:** _____

Immediately Following Injury

Upon hearing of the injury, the school representative will:

- Obtain release of information between the school, parent, and medical provider
- Gather/obtain copies of pertinent information (including the documentation of the medical diagnosis) from medical provider(s) and parents/guardians for school file
- Contact the student's classroom teacher(s) to:
 - Inform them of the student's condition
 - Discuss potential or recommended educational accommodations
 - Request that they monitor student's status following return to school, and report any concerns or additional accommodations

If Symptoms Appear To Be Chronic

The school will:

- Review academic record prior to injury, and concerns shared by classroom teacher(s), parent/guardians, or other staff
- Contact student's family to provide information and resources about mild TBI and potential educational accommodations
- Contact the 504 coordinator to a request 504 evaluation if the resulting educational needs are chronic and/or severe (resulting in substantial limitation of one or more major life activities for an extended period of time) *Note:* This process requires parental notice and signed consent
- Follow due process requirements and initiate referral for a special education evaluation if warranted; and incorporate pertinent medical information from clinic evaluations, out-patient and/or neuropsychologist reports

TBI School Checklist, *continued*

- Develop IEP if student qualifies for special education services under the TBI category
- Implement accommodations in all educational settings as needed
- Collaborate with other school staff and conduct staff/peer inservices as appropriate
- Develop formal plan for communication with medical and therapy staff, the student, and the family with regard to ongoing physical, health and learning needs
- Support the student in communicating their needs and increasing self-advocacy skills, and assure that these areas are as incorporated into their IEP goals and objectives

Ongoing

The team will:

- Informally re-evaluate student's needs and modify educational plan accordingly
- Maintain periodic contact with parent(s) about the student's changing needs and level of progress, following guidelines and laws set forth by Section 504 and IDEA

TBI Medical Documentation Form

(Electronic Fillable forms are available on the MN Low Incidence Projects website.)

NOTE: To be completed and signed by physician and mailed or returned to school nurse or administrator prior to student's return to school.

Child's name: _____

Date of Birth: _____

This child has sustained a traumatic brain injury and has been treated by a physician.

Clinic Date: _____

Emergency room Date: _____

Hospitalization Admission Date: _____ Discharge Date: _____

Observed symptoms at the time of medical exam (please check those that apply):

- | | | |
|--|--|--|
| <input type="checkbox"/> Physical | <input type="checkbox"/> Cognitive | <input type="checkbox"/> Behavioral/Mood |
| <input type="checkbox"/> Headache | <input type="checkbox"/> Confusion | <input type="checkbox"/> Irritability |
| <input type="checkbox"/> Sleep changes | <input type="checkbox"/> Attention problems | <input type="checkbox"/> Agitation |
| <input type="checkbox"/> Fatigue | <input type="checkbox"/> Difficulty concentrating | <input type="checkbox"/> Frustration |
| <input type="checkbox"/> Nausea/vomiting | <input type="checkbox"/> Memory problems | <input type="checkbox"/> Depression |
| <input type="checkbox"/> Dizziness | <input type="checkbox"/> Slowed processing speed | <input type="checkbox"/> Anxiety |
| <input type="checkbox"/> Problems with balance | <input type="checkbox"/> Difficulty with organization | <input type="checkbox"/> Problems with motivation |
| <input type="checkbox"/> Sensitivity to light and/or Sound | <input type="checkbox"/> Impaired judgment/impulse control | <input type="checkbox"/> Lack of social energy or engagement |
| <input type="checkbox"/> Visual changes | <input type="checkbox"/> Difficulty with new learning | <input type="checkbox"/> Difficulty with initiation |
| <input type="checkbox"/> Hearing problems | <input type="checkbox"/> Difficulty problem solving | <input type="checkbox"/> Mood swings |
| <input type="checkbox"/> Tinnitus (ringing in ears) | <input type="checkbox"/> Decrease in academic skills | <input type="checkbox"/> Inappropriate behaviors |
| <input type="checkbox"/> Change in speech | <input type="checkbox"/> Difficulty with transitions | <input type="checkbox"/> Developmental regression |
| <input type="checkbox"/> Seizures | <input type="checkbox"/> Trouble multi-tasking | <input type="checkbox"/> Self-centered behavior |
| <input type="checkbox"/> Motor skill deficits | <input type="checkbox"/> Difficulty with planning | <input type="checkbox"/> Impulsivity/restlessness |
| <input type="checkbox"/> Sensory impairment | <input type="checkbox"/> Trouble orienting | <input type="checkbox"/> Feelings of grief & loss |
| <input type="checkbox"/> Physical impairment | <input type="checkbox"/> Trouble sequencing | <input type="checkbox"/> Low self-esteem |
| <input type="checkbox"/> Change in strength | <input type="checkbox"/> Change in expressive/receptive language | <input type="checkbox"/> Difficulty with peer relationships |
| | <input type="checkbox"/> Poor insight | <input type="checkbox"/> Emotional lability |
| | | <input type="checkbox"/> Lack of motivation |
| | | <input type="checkbox"/> Vulnerability |

TBI Medical Documentation Form, *continued*

Limitations in strength/duration: _____

Medications: _____

Restrictions:

Physical Restrictions (e.g., physical education class, recess, stairs, etc.) Yes No

Academic Restrictions (e.g., school attendance, schedule, homework, etc.) Yes No

List restrictions and recommended time period: _____

Sports (Check one): Yes - Able to participate No participation at this time

If yes, list any restrictions: _____

If additional information is needed, contact:

Clinic or Hospital Contact / Name: _____

Clinic or Hospital Contact / Phone: _____

Printed Physician's Name: _____

Physician's Signature (Required): _____

Date: _____

*Attach pertinent documentation to assist with educational programming.

TBI School Re-Entry Form Following Extended Hospitalization/Rehabilitation

(Electronic Fillable forms are available on the MN Low Incidence Projects website.)

Student Name: _____ **School/Grade:** _____

Parent/Guardian Name: _____ **Phone #:** _____

Date of Injury: _____

Tentative Discharge Date: _____

Following Hospital Admission

The hospital representative will:

- Request that the parent/guardian sign a release of information, allowing contact with the school.
- Contact the school representative (e.g., school principal, school nurse, special education administration, and/or TBI specialist if known)

The school representative will:

- Attend care conferences as appropriate
- Obtain release of information between school/hospital
- Contact the child's case manager at the hospital to discuss the school's re-entry issues/questions, and provide pertinent educational information to hospital staff
- Contact the school administrator, school nurse, and/or the child's classroom teachers to:
 - Inform them of the child's condition
 - Obtain/review current educational records

After Student's Condition Has Stabilized

The hospital and school team will:

- Discuss important dates such as anticipated timeline for discharge/school re-entry; and school re-entry plans, including school calendar considerations.

TBI School Re-Entry Form Following Extended Hospitalization/Rehabilitation, *continued*

- Discuss the full re-entry plan, including potential environmental and educational needs and accommodations, including shortened school days if required.

The school representative will:

- Confirm who the primary school contact will be for the remainder of the re-entry process
- (If requested) Provide the hospital teachers with appropriate educational materials
- Attend care conferences as appropriate
- Obtain copies of hospital updates, evaluations, and documentation of the medical diagnosis of TBI; this information should then be incorporated into the school evaluation process.
- Contact the parent/guardian and initiate special education due process requirements and evaluation.

Prior to Hospital Discharge/School Re-Entry

The school educational team will:

- Complete special education evaluation and develop an IEP Note: It is recommended that the school evaluation results and IEP meetings be combined with the hospital discharge planning meeting
- Assure that all educational supports/accommodations are in place prior to discharge
- Collaborate with other school staff as necessary (e.g., school nurse, OT, PT, speech/language clinician, DAPE instructor, etc.), and contact the student's family to provide information and resources about the student's brain injury and accommodations and/or modifications in the school setting

TBI School Re-Entry Form Following Extended Hospitalization/Rehabilitation, *continued*

Arrival at School

The team will:

- Continue to communicate with medical/hospital staff and family with regard to ongoing physical, health and learning needs as they relate to the student's educational program

Following arrival at school, the team will:

- Further modify school environments to meet the student's needs
- Length of school day
- Rest periods
- Specialized transportation
- Schedule
- Check-in contact
- Technology supports
- Emergency evacuation procedures
- Other
- Provide staff and peer inservices as appropriate

After First Weeks in School/Ongoing

The team will:

- Re-evaluate the student's needs and modify educational plan accordingly
- Maintain periodic contact with parent/guardian, teacher, and medical team about the student's changing needs and progress

ACE Form

ACUTE CONCUSSION EVALUATION (ACE)
PHYSICIAN/CLINICIAN OFFICE VERSION

Gerard Gioia, PhD¹ & Micky Collins, PhD²
¹Children's National Medical Center
²University of Pittsburgh Medical Center

Patient Name: _____
 DOB: _____ Age: _____
 Date: _____ ID/MR# _____

A. Injury Characteristics Date/Time of Injury _____ Reporter: Patient Parent Spouse Other _____

1. Injury Description _____

1a. Is there evidence of a forcible blow to the head (direct or indirect)? Yes No Unknown
 1b. Is there evidence of intracranial injury or skull fracture? Yes No Unknown
 1c. Location of Impact: Frontal Lt Temporal Rt Temporal Lt Parietal Rt Parietal Occipital Neck Indirect Force
 2. Cause: MVC Pedestrian-MVC Fall Assault Sports (specify) _____ Other _____
 3. **Amnesia Before (Retrograde)** Are there any events just BEFORE the injury that you/ person has no memory of (even brief)? Yes No Duration _____
 4. **Amnesia After (Anterograde)** Are there any events just AFTER the injury that you/ person has no memory of (even brief)? Yes No Duration _____
 5. **Loss of Consciousness:** Did you/ person lose consciousness? Yes No Duration _____
 6. **EARLY SIGNS:** Appears dazed or stunned Is confused about events Answers questions slowly Repeats Questions Forgetful (recent info)
 7. **Seizures:** Were seizures observed? No Yes Detail _____

B. Symptom Check List* Since the injury, has the person experienced any of these symptoms any more than usual today or in the past day?
 Indicate presence of each symptom (0=No, 1=Yes). *Lovell & Collins, 1998 JHTR

PHYSICAL (10)		COGNITIVE (4)		SLEEP (4)	
Headache	0 1	Feeling mentally foggy	0 1	Drowsiness	0 1
Nausea	0 1	Feeling slowed down	0 1	Sleeping less than usual	0 1 N/A
Vomiting	0 1	Difficulty concentrating	0 1	Sleeping more than usual	0 1 N/A
Balance problems	0 1	Difficulty remembering	0 1	Trouble falling asleep	0 1 N/A
Dizziness	0 1	COGNITIVE Total (0-4) _____		SLEEP Total (0-4) _____	
Visual problems	0 1	EMOTIONAL (4)		Exertion: Do these symptoms <u>worsen</u> with: Physical Activity <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A Cognitive Activity <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A Overall Rating: How different is the person acting compared to his/her usual self? (circle) Normal 0 1 2 3 4 5 6 Very Different	
Fatigue	0 1	Irritability	0 1		
Sensitivity to light	0 1	Sadness	0 1		
Sensitivity to noise	0 1	More emotional	0 1		
Numbness/Tingling	0 1	Nervousness	0 1		
PHYSICAL Total (0-10) _____		EMOTIONAL Total (0-4) _____			
(Add Physical, Cognitive, Emotion, Sleep totals)					
Total Symptom Score (0-22)					

C. Risk Factors for Prolonged Recovery (check all that apply)

Concussion History? Y ___ N ___	Headache History? Y ___ N ___	Developmental History	Psychiatric History
Previous # 1 2 3 4 5 6+	Prior treatment for headache	Learning disabilities	Anxiety
Longest symptom duration Days ___ Weeks ___ Months ___ Years ___	History of migraine headache ___ Personal ___ Family	Attention-Deficit/ Hyperactivity Disorder	Depression Sleep disorder
If multiple concussions, less force caused reinjury? Yes ___ No ___		Other developmental disorder	Other psychiatric disorder

List other comorbid medical disorders or medication usage (e.g., hypothyroid, seizures)

D. RED FLAGS for acute emergency management: Refer to the emergency department with sudden onset of any of the following:

- * Headaches that worsen
- * Looks very drowsy/ can't be awakened
- * Can't recognize people or places
- * Neck pain
- * Seizures
- * Repeated vomiting
- * Increasing confusion or irritability
- * Unusual behavioral change
- * Focal neurologic signs
- * Slurred speech
- * Weakness or numbness in arms/legs
- * Change in state of consciousness

E. Diagnosis (ICD): Concussion w/o LOC 850.0 Concussion w/ LOC 850.1 Concussion (Unspecified) 850.9 Other (854) _____
 No diagnosis

F. Follow-Up Action Plan Complete ACE Care Plan and provide copy to patient/family.

No Follow-Up Needed
 Physician/Clinician Office Monitoring: Date of next follow-up _____
 Referral:
 Neuropsychological Testing
 Physician: Neurosurgery _____ Neurology _____ Sports Medicine _____ Psychiatrist _____ Psychologist _____ Other _____
 Emergency Department

A concussion (or mild traumatic brain injury (MTBI)) is a complex pathophysiologic process affecting the brain, induced by traumatic biomechanical forces secondary to direct or indirect forces to the head. Disturbance of brain function is related to neurometabolic dysfunction, rather than structural injury, and is typically associated with normal structural neuroimaging findings (i.e., CT scan, MRI). Concussion may or may not involve a loss of consciousness (LOC). Concussion results in a constellation of physical, cognitive, emotional, and sleep-related symptoms. Symptoms may last from several minutes to days, weeks, months or even longer in some cases.

ACE Instructions

The ACE is intended to provide an evidence-based clinical protocol to conduct an initial evaluation and diagnosis of patients (both children and adults) with known or suspected MTBI. The research evidence documenting the importance of these components in the evaluation of an MTBI is provided in the reference list.

A. Injury Characteristics:

1. Obtain **description of the injury** – how injury occurred, type of force, location on the head or body (if force transmitted to head). Different biomechanics of injury may result in differential symptom patterns (e.g., occipital blow may result in visual changes, balance difficulties).
2. Indicate the **cause of injury**. Greater forces associated with the trauma are likely to result in more severe presentation of symptoms.
- 3/4. **Amnesia**: Amnesia is defined as the failure to form new memories. Determine whether amnesia has occurred and attempt to determine length of time of memory dysfunction – **before** (retrograde) and **after** (anterograde) injury. Even seconds to minutes of memory loss can be predictive of outcome. Recent research has indicated that amnesia may be up to 4-10 times more predictive of symptoms and cognitive deficits following concussion than is LOC (less than 1 minute).¹
5. **Loss of consciousness (LOC)** – If occurs, determine length of LOC.
6. **Early signs**. If present, ask the individuals who know the patient (parent, spouse, friend, etc) about specific signs of the concussion that may have been observed. These signs are typically observed early after the injury.
7. Inquire whether **seizures** were observed or not.

B. Symptom Checklist:²

1. Ask patient (and/or parent, if child) to report presence of the four categories of symptoms since injury. It is important to assess all listed symptoms as different parts of the brain control different functions. One or all symptoms may be present depending upon mechanisms of injury.³ Record “1” for Yes or “0” for No for their presence or absence, respectively.
2. For all symptoms, indicate presence of symptoms as experienced within the past 24 hours. Since symptoms can be present pre-morbidly/at baseline (e.g., inattention, headaches, sleep, sadness), it is important to assess change from their usual presentation.
3. **Scoring**: Sum total number of symptoms present per area, and sum all four areas into Total Symptom Score (score range 0-22). (Note: most sleep symptoms are only applicable after a night has passed since the injury. Drowsiness may be present on the day of injury.) If symptoms are new and present, there is no lower limit symptom score. Any **score > 0** indicates **positive symptom** history.
4. **Exertion**: Inquire whether any symptoms worsen with physical (e.g., running, climbing stairs, bike riding) and/or cognitive (e.g., academic studies, multi-tasking at work, reading or other tasks requiring focused concentration) exertion. Clinicians should be aware that symptoms will typically worsen or re-emerge with exertion, indicating incomplete recovery. Over-exertion may protract recovery.
5. **Overall Rating**: Determine how different the person is acting from their usual self. Circle “0” (Normal) to “6” (Very Different).

C. Risk Factors for Protracted Recovery: Assess the following risk factors for possible complicating factors in the recovery process.

1. **Concussion history**: Assess the number and date(s) of prior concussions, the duration of symptoms for each injury, and whether less biomechanical force resulted in re-injury. Research indicates that cognitive and symptom effects of concussion may be cumulative, especially if there is minimal duration of time between injuries and less biomechanical force results in subsequent concussion (which may indicate incomplete recovery from initial trauma).⁴⁻⁸
2. **Headache history**: Assess personal and/or family history of diagnosis/treatment for headaches. Research indicates headache (migraine in particular) can result in protracted recovery from concussion.⁹⁻¹¹
3. **Developmental history**: Assess history of learning disabilities, Attention-Deficit/Hyperactivity Disorder or other developmental disorders. Research indicates that there is the possibility of a longer period of recovery with these conditions.¹²
4. **Psychiatric history**: Assess for history of depression/mood disorder, anxiety, and/or sleep disorder.¹³⁻¹⁶

D. Red Flags: The patient should be carefully observed over the first 24-48 hours for these serious signs. Red flags are to be assessed as **possible signs of deteriorating neurological functioning**. Any positive report should prompt strong consideration of referral for emergency medical evaluation (e.g. CT Scan to rule out intracranial bleed or other structural pathology).¹⁷

E. Diagnosis: The following ICD diagnostic codes may be applicable.

850.0 (Concussion, with no loss of consciousness) – Positive injury description with evidence of forcible direct/ indirect blow to the head (A1a); plus evidence of active symptoms (B) of any type and number related to the trauma (Total Symptom Score >0); no evidence of LOC (A5), skull fracture or intracranial injury (A1b).

850.1 (Concussion, with brief loss of consciousness < 1 hour) – Positive injury description with evidence of forcible direct/ indirect blow to the head (A1a); plus evidence of active symptoms (B) of any type and number related to the trauma (Total Symptom Score >0); positive evidence of LOC (A5), skull fracture or intracranial injury (A1b).

850.9 (Concussion, unspecified) – Positive injury description with evidence of forcible direct/ indirect blow to the head (A1a); plus evidence of active symptoms (B) of any type and number related to the trauma (Total Symptom Score >0); unclear/unknown injury details; unclear evidence of LOC (A5), no skull fracture or intracranial injury.

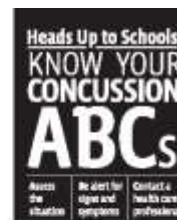
Other Diagnoses – If the patient presents with a positive injury description and associated symptoms, but additional evidence of intracranial injury (A 1b) such as from neuroimaging, a moderate TBI and the diagnostic category of 854 (Intracranial injury) should be considered.

F. Follow-Up Action Plan: Develop a follow-up plan of action for symptomatic patients. The physician/clinician may decide to (1) monitor the patient in the office or (2) refer them to a specialist. Serial evaluation of the concussion is critical as symptoms may resolve, worsen, or ebb and flow depending upon many factors (e.g., cognitive/physical exertion, comorbidities). Referral to a specialist can be particularly valuable to help manage certain aspects of the patient's condition. (Physician/Clinician should also complete the ACE Care Plan included in this tool kit.)

1. **Physician/Clinician serial monitoring** – Particularly appropriate if number and severity of symptoms are steadily decreasing over time and/or fully resolve within 3-5 days. If steady reduction is not evident, referral to a specialist is warranted.
2. **Referral to a specialist** – Appropriate if symptom reduction is not evident in 3-5 days, or sooner if symptom profile is concerning in type/severity.
 - **Neuropsychological Testing** can provide valuable information to help assess a patient's brain function and impairment and assist with treatment planning, such as return to play decisions.
 - **Physician Evaluation** is particularly relevant for medical evaluation and management of concussion. It is also critical for evaluating and managing focal neurologic, sensory, vestibular, and motor concerns. It may be useful for medication management (e.g., headaches, sleep disturbance, depression) if post-concussive problems persist.

DCD Concussion Signs & Symptoms Checklist

Concussion Signs and Symptoms Checklist



Student's Name: _____ Student's Grade: _____ Date/Time of Injury: _____

Where and How Injury Occurred: *(Be sure to include cause and force of the hit or blow to the head.)* _____

Description of Injury: *(Be sure to include information about any loss of consciousness and for how long, memory loss, or seizures following the injury, or previous concussions, if any. See the section on Danger Signs on the back of this form.)* _____

DIRECTIONS:

Use this checklist to monitor students who come to your office with a head injury. Students should be monitored for a minimum of 30 minutes. Check for signs or symptoms when the student first arrives at your office, fifteen minutes later, and at the end of 30 minutes.

Students who experience one or more of the signs or symptoms of concussion after a bump, blow, or jolt to the head should be referred to a health care professional with experience in evaluating for concussion. For those instances when a parent is coming to take the student to a health care professional, observe the student for any new or worsening symptoms right before the student leaves. Send a copy of this checklist with the student for the health care professional to review.

To download this checklist in Spanish, please visit: www.cdc.gov/Concussion. Para obtener una copia electrónica de esta lista de síntomas en español, por favor visite: www.cdc.gov/Concussion.

May 2010

OBSERVED SIGNS	0 MINUTES	15 MINUTES	30 MINUTES	<input type="checkbox"/> MINUTES <small>Just prior to leaving</small>
Appears dazed or stunned				
Is confused about events				
Repeats questions				
Answers questions slowly				
Can't recall events <i>prior</i> to the hit, bump, or fall				
Can't recall events <i>after</i> the hit, bump, or fall				
Loses consciousness (even briefly)				
Shows behavior or personality changes				
Forgets class schedule or assignments				
PHYSICAL SYMPTOMS				
Headache or "pressure" in head				
Nausea or vomiting				
Balance problems or dizziness				
Fatigue or feeling tired				
Blurry or double vision				
Sensitivity to light				
Sensitivity to noise				
Numbness or tingling				
Does not "feel right"				
COGNITIVE SYMPTOMS				
Difficulty thinking clearly				
Difficulty concentrating				
Difficulty remembering				
Feeling more slowed down				
Feeling sluggish, hazy, foggy, or groggy				
EMOTIONAL SYMPTOMS				
Irritable				
Sad				
More emotional than usual				
Nervous				

→ More

Danger Signs:

Be alert for symptoms that worsen over time. The student should be seen in an emergency department right away if s/he has:

- One pupil (the black part in the middle of the eye) larger than the other
- Drowsiness or cannot be awakened
- A headache that gets worse and does not go away
- Weakness, numbness, or decreased coordination
- Repeated vomiting or nausea
- Slurred speech
- Convulsions or seizures
- Difficulty recognizing people or places
- Increasing confusion, restlessness, or agitation
- Unusual behavior
- Loss of consciousness (even a brief loss of consciousness should be taken seriously)

Additional Information About This Checklist:

This checklist is also useful if a student appears to have sustained a head injury outside of school or on a previous school day. In such cases, be sure to ask the student about possible sleep symptoms. Drowsiness, sleeping more or less than usual, or difficulty falling asleep may indicate a concussion.

To maintain confidentiality and ensure privacy, this checklist is intended only for use by appropriate school professionals, health care professionals, and the student's parent(s) or guardian(s).

For a free tear-off pad with additional copies of this form, or for more information on concussion, visit: www.cdc.gov/Concussion.

Resolution of Injury:

- Student returned to class
- Student sent home
- Student referred to health care professional with experience in evaluating for concussion

SIGNATURE OF SCHOOL PROFESSIONAL COMPLETING THIS FORM: _____

TITLE: _____

COMMENTS:

For more information on concussion and to order additional materials for school professionals FREE-OF-CHARGE, visit: www.cdc.gov/Concussion.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
CENTERS FOR DISEASE CONTROL AND PREVENTION



Appendices

Appendix D: Resources

[School Resources](#)

[Community Resources](#)

[State Resources](#)

[Electronic Resources & Publications](#)

School Resources

- ❖ **For *local* support, training and resources in the school setting**, contact the area School TBI Specialist or Physical /Health Disabilities (P/HD) teacher for your district or region. If not known, contact the Regional Low Incidence Facilitator. For a current listing of Statewide TBI Network Members and other information, click on the following link:<http://www.mnlowincidenceprojects.org/tbiRegionalStatewideSupport.html>

- ❖ **For *statewide* technical support, training, and resources**, contact:

Deb Williamson, Statewide PI & TBI Specialist

MN Low Incidence Projects

2 Pine Tree Drive, Suite 101

Arden Hills, MN 55112

Phone: (612) 638-1532

E-mail: Deb.Williamson@metroecu.org

MN Low Incidence Projects

www.mnlowincidenceprojects.org

- ❖ Information on Regional & Statewide Support
- ❖ TBI Manual for Educators
- ❖ TBI Brochure for Educators
- ❖ Guidelines/Service Delivery Considerations for Educators
- ❖ Technical Training Materials & Resources

Minnesota Department of Education

www.education.state.mn.us

- ❖ Special Education Services in the Schools: Resources & Information
- ❖ Compliance Manual for Section 504 of the Rehabilitation Act of 1973

Community Resources

The Arc of Minnesota

800 Transfer Road, Suite 7A

St. Paul, MN 55114

Phone: (800) 582-5256

mail@arcmn.org

Courage Kenny Rehabilitation Institute

Various services at different locations

Phone: (763) 588-0811 or 888-846-8253

www.couragecenter.org/index.aspx

Epilepsy Foundation of Minnesota

1600 University Ave West, Suite #300

St. Paul, MN 55104

Phone: (651) 287-2300

www.epilepsyfoundationmn.org/

Family Voices of Minnesota (A parent-run organization that serves families of children and youth with special health care needs and disabilities, including TBI.)

Phone: 1-866-334-8444 (toll free)

www.familyvoicesofminnesota.org

Email: p2p@familyvoicesofminnesota.org

Gillette Children’s Specialty Healthcare

200 University Avenue East

St. Paul, MN 55101

Phone: (651) 291-2848

www.gillettechildrens.org/

Institute of Community Integration

University of Minnesota

1023 Pattee Hall

150 Pillsbury Dr. SE

Minneapolis, MN 55455

Phone: (612) 624-6300

ici@umn.edu

Learning Disabilities of Minnesota

Phone: (952) 582-6000

info@ldminnesota.org

www.ldminnesota.org

Mayo Clinic

Phone: (507) 284-2511

www.mayoclinic.org

Metropolitan Center for Independent Living

Phone: (651) 646-8342

www.mcil-mn.org

Minnesota Disability Law Center

Phone: (612) 332-1441

TDD: (612) 332-4668

www.mndlc.org

Minnesota State Council on Disability (MSCOD)

Phone: 651-361-7800 (V/TTY)

Toll-free: 1-800-945-8913 (V/TTY)

www.disability.state.mn.us

<http://www.positivelyminnesota.com>

Email: DEED.CustomerService@state.mn.us

PACER (Parent Advocacy Coalition for Educational Rights)

Phone: (952) 838-9000

<http://www.pacer.org>

State Resources

To better assist families in meeting the needs of their child/teen in the home, school and community settings, educators should be aware of the agency services below that are designed to support children and youth with brain injuries and their families.

- ❖ **Minnesota Vocational Rehabilitation Services**, funded under the Department of Employment & Economic Development (DEED), provides services to eligible individuals with disabilities who need assistance to prepare for, obtain or maintain employment. Priority for services is given to individuals with severe disabilities. The RS counselor is a resource for vocational assessment, vocational counseling and planning, job training and placement, and identification of community resources that provide vocational support services. To find out more about RS services, refer to Part 11 in the TBI Manual, or call (651) 296-5616 in the Twin Cities Metro area, or 1-(800) 328-9095 in Greater Minnesota and ask for the phone number of your local RS office. The TDD/TTY number is (651) 296-3900.
- ❖ **Home and Community Based Services Programs** for children with special needs and their families are funded by the Minnesota Department of Human Services and accessed through Hennepin County Human Services (also an access point for individuals who live outside of Hennepin County). These programs provide funding for services that are necessary for an individual to remain in the community and avoid placement in more restrictive settings, such as nursing homes. Some individuals with traumatic brain injury may be eligible for services provided through the TBI waiver. These services include respite care, assistive living, behavioral programming, case management, cognitive rehabilitation, family counseling, independent living skills, personal care attendant services (PCA), and prevocational services. For more information, call (612) 348-4500.
- ❖ **Additional community resources** may include community education programs, volunteer programs, and service clubs, and are listed in local directories.

Electronic Resources & Publications

Gillette Children's Specialty Healthcare

www.gillettechildrens.org

- ❖ Booklet: Returning to School After a Traumatic Brain Injury
- ❖ Booklet: Mild Traumatic Brain Injuries

Hennepin County Medical Center- Pediatric Brain Injury Program

<http://www.hcmc.org/depts/PediatricBrainInjuryProgram.htm>

- ❖ Brochure: *Guidelines for School Re-Entry* (2008)
- ❖ Brochure: *Guidelines for Returning to Sports and Recreation Following Traumatic Brain Injury*
- ❖ Booklet: *My Child's Brain Injury* (English)
- ❖ Booklet: *La Lesión Cerebral De Mi Hijo* (Spanish)

Lash & Associates Publishing/Training Inc.

(Commercial website with many resources re: children/youth and TBI)

www.lapublishing.com

LEARNet.org

(Problem solving system & resource website hosted by the Brain Injury Association of New York State; resource for teachers, clinicians, parents & students)

www.projectlearnnet.org

Mayo Clinic

www.mayoclinic.org

Booklet: *Understanding Brain Injury: A Guide for Parents and Teachers* (2008)

Appendices

Appendix E: References

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