Learning Objectives

- Be able to discuss the disruption in trajectory of child development interrupted by brain injury
- Be able to identify the diagnostic criteria for Shaken Baby Syndrome/Abusive Head Trauma
- Be able to explain the types of educational accommodations available under a Section 504 plan
- Be able to describe the process of gaining access to special education supports and services
- Be able to articulate why the traditional 3-year or triennial re-assessment cycle utilized in special education may not be appropriate for students with brain injury
- Be able to distinguish between a 504 Plan and an IEP
- Be familiar with options for special education for children in private or parochial schools
- Be able to give an example of an Individual Health Care Plan

Introduction

Traumatic brain injury is the leading cause of death and acquired disability in children and adolescents in the United States. The age groups at highest risk for TBI are:

- Ages 0-4
  - Falls
  - Susceptible to Abusive Head Trauma/Shaken Baby Syndrome (AHT/SBS)
- Ages 15-19
  - Struck by something
  - Falls
  - Motor/Vehicle Accidents

Age Effect

- While children may look fine after the trauma, they’re just as vulnerable to injury as adults.
- The prognosis for functional recovery of previously learned skills is better the younger the child is when the injury is acquired; but prognosis for acquiring new skills is worse the younger the child is at time of injury.
- Effects of trauma may not immediately be apparent, as the child’s brain is still developing.
- As the child gets older, that part of the brain previously damaged may not work as well as it should.

Development and Developmental Disruption
Peak Maturation Mileposts

Ages 3-5
- Period of overall rapid brain growth in all regions of the brain
- Perfecting ability to form images, use words, and place things in order (beginning to develop tactics for problem-solving)

Ages 8-10
- Sensory and motor systems continue to mature in tandem
- Frontal executive system begins accelerated development
- Maturation of sensory motor regions of the brain peak
- Begin to perform simple operational functions (e.g. determining weight and mathematical reasoning)

Most brain maturation occurs from birth to 5 years. Injury in that time frame may be the most devastating time for injury to occur.

Peak Maturation Mileposts

Ages 14-15
- Maturation of visuospatial, visuo-auditory and somatic systems
- Able to review formal operations, find flaws and create new ones

Ages 17-19
- Maturation of frontal executive functions
- Questions information, reconsiders and formulates hypotheses

Brain Maturation by Lobe

PARIETAL-OCCIPITAL REGION

Age Increments Birth - 21+ years

% of Maturation Increments
- 8.0%
- 7.0%
- 6.0%
- 5.0%
- 4.0%
- 3.0%
- 2.0%
- 1.0%
- 0.0%

Development Disruption

- Important to properly diagnose brain injury
- Consider normal development stages of children and adolescents and disruption of those stages by brain injury
- Understanding the role rehabilitation can play in conjunction with education can affect outcomes
- With medical and school collaboration, student is able to achieve positive outcomes along the trajectory

Development Disruption

- For children who may experience this developmental stall, continued rehabilitative efforts may prove to mitigate the stalled post-injury development
- The green area provides an example in which the brain injury has been properly identified, medical and school professionals are collaborating, and ongoing services and supports are made available
Non-traumatic Causes of Brain injury

- Brain tumors
- Anoxia or hypoxia
- Infections
- CVA (from AVM or Sickle Cell Disease)
- Exposure to toxic substances

ABUSE HEAD TRAUMA/SHAKEN BABY SYNDROME (AHT/SBS)

AHT/SBS

- Most common in infants and young children 0 to 5 years old
- More common for boys to be the victim

Girls 42%
Boys 58%

- Often committed by frustrated caregiver in response to crying baby, temper tantrums or issues due to toilet training
- Male caregivers more often commit the abuse

AHT/SBS Prevention Strategies

- Education of new parents that shaking a baby is dangerous; in a classic study 25-50% of teens did not know that shaking a baby could be dangerous
- Prevention efforts include dangers of shaking baby, and signs and symptoms of SBS/AHT
- Training for ways to cope with crying child and other developmental challenges (tantrums, toilet training)
- Information about crises hotlines in some communities
- Requiring training for child care workers and foster parents

AHT/SBS Diagnostic Indicators

- Bleeding of the brain (subdural hemorrhage or hematoma)
- Brain swelling (cerebral edema)
- Bleeding in eyes (retinal hemorrhage)

AHT/SBS Outcomes

- Long Term Disability
- Severe Deficits
- Die as a Result of Injury
- Other
**Concussion and mTBI**

- Each year in the US alone, there may be hundreds of thousands of student athletes who sustain a concussion.
- If the concussion occurs as a sports or recreational injury, there is a need for training and education regarding how the student athlete should be cleared to return to play and to return to school.
- Student athletes with concussion must be evaluated, treated, and followed-up by health care professionals with experience and training in managing concussion.

**POST CONCUSSION SYNDROME**

- Most student athletes’ concussion symptoms will begin to dissipate within days or weeks of injury.
- It is reported that 10% of athletes experiencing a concussion will have persistent symptoms.
- These symptoms may include:
  - Problems with attention
  - Memory
  - Fatigue
  - Sleep
  - Headache
  - Dizziness
  - Irritability
  - Changes in mood and personality

**Second Impact Syndrome**

- Student athletes whose concussions are not recognized are risking even more serious consequences if they continue to play after a concussion.
- The effects of multiple concussions may be cumulative and, if there is not sufficient time for the brain to recover after an initial concussion, the athlete runs the risk of suffering Second Impact Syndrome (SIS).
- SIS can occur when an athlete sustains an initial concussion and then sustains a second head injury before symptoms from the first have fully resolved.
- The second concussion could occur minutes, days, or weeks after the initial event and can be fatal or result in severe disability.
- SIS may occur due to diffuse cerebral swelling or secondary to a subdural hematoma.

**Return to Play or School**

- As of 2013, 50 states and the District of Columbia had enacted concussion laws governing youth sports designed to educate coaches, players, and families about concussion.
- The essence of most of these bills is that once a concussion has been suspected, it is essential to remove the athlete from play and to have the athlete evaluated by a medical professional with training and experience in concussion.
- The signs and symptoms of concussion may not occur immediately and may evolve over hours or days following the concussion.
- It is important to assess the athlete periodically for several hours and to inform parents or guardians to watch for worsening signs and symptoms.
- Both cognitive rest and physical rest are needed to allow the brain time to recover.
- Physical or cognitive exertion can delay or decrease recovery.
- Limiting behaviors is challenging and requires ongoing attention to the signs and symptoms.
- A concussion professional should make both immediate and long-term recommendations to the school and the family, based on evaluation of symptoms and when symptoms have reduced.

**EDUCATION AFTER BRAIN INJURY**
### Collaborating with Medical and Rehabilitation System

- Medical services are the beginning of the continuum of services necessary to support long-term needs of children with BI.
- Important for local hospitals and schools to develop policies and procedures that promote effective communication and discharge planning.
- Referral systems that facilitate communication between families, schools, and families increase chances of child receiving appropriate services.
- Children who are properly referred will be better managed, both medically and educationally.

### Educational Needs

- The educational needs of children and adolescents who acquire brain injuries generally cluster around three major domains:
  - Cognitive
  - Psychosocial
  - Sensorimotor

### Common Long Term Effects

<table>
<thead>
<tr>
<th>Problem Area</th>
<th>The Student...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language Skills</td>
<td>Has difficulty taking turns in a conversation</td>
</tr>
<tr>
<td></td>
<td>Has difficulty summarizing and articulating thoughts in a logical fashion</td>
</tr>
<tr>
<td></td>
<td>Does not understand the meaning of a conversation when figurative speech or metaphors are used</td>
</tr>
<tr>
<td>Visual-Spatial Skills</td>
<td>Has difficulty completing simple math problems when presented with a worksheet</td>
</tr>
<tr>
<td></td>
<td>Has difficulty organizing materials to bring to class</td>
</tr>
<tr>
<td></td>
<td>Becomes disoriented in the hallway and has difficulty finding the classroom</td>
</tr>
<tr>
<td></td>
<td>Takes an inordinate amount of time to produce written material</td>
</tr>
<tr>
<td>Behavioral and Emotional Effects</td>
<td>Says or does socially inappropriate things</td>
</tr>
<tr>
<td></td>
<td>Is unable to share or discuss issues with others</td>
</tr>
<tr>
<td></td>
<td>Impulsively leaves the seat or classroom</td>
</tr>
<tr>
<td></td>
<td>Becomes easily frustrated</td>
</tr>
<tr>
<td></td>
<td>Is unable to come up with solutions to problem situations (e.g., lost lunch money)</td>
</tr>
<tr>
<td></td>
<td>Has difficulty drawing conclusions from facts presented</td>
</tr>
<tr>
<td></td>
<td>Has difficulty evaluating and altering performance</td>
</tr>
</tbody>
</table>

### Changes in Behavior

Changes in behavior are the most persistent and disabling (conditions of a brain injury, and may be attributed to a number of factors, including:

- Difficulty with short-term memory
- Reduced behavioral control
- Limited executive functioning
- Limited awareness of other's expectations of behavior
- Disregard for the reality of situations
- Misapprehension of intention
- Limited awareness of social cues
- Communication deficits
- Inattention
- Impulsivity
- Overactivity
- Inefficiency
- Emotional lability

### Common Long Term Effects

- Memory
  - Is unable to recall previously learned information that serves as the foundation for new learning
  - Cannot remember a series of two to three step directions
  - Is unable to group new concepts without repeated exposures
- Attention and Concentration
  - Has difficulty staying on topic during a class discussion
  - Is unable to complete a task without prompting
  - Blurted answers in the middle of a class session
  - Becomes distracted by normal classroom activity
  - Is delayed in responding to questions
- Higher Level Problem Solving
  - Has difficulty organizing and completing long-term projects
  - Is unable to sequence steps necessary to plan an activity
  - Is unable to come up with solutions to problem situations (e.g., lost lunch money)
  - Has difficulty drawing conclusions from facts presented
  - Is unable to grasp new concepts without repeated exposures
  - Cannot remember a series of two or three step directions
  - Becomes easily frustrated
  - Leaves the seat or classroom impulsively
  - Is unable to start or stop an activity without prompting
  - Is easily misled by peers into making poor choices
  - Becomes easily frustrated
  - Is unaware of and denies any impairments
  - Misperceives interactions
  - Limited awareness of social cues
  - Communication deficits
  - Inattention
  - Impulsivity
  - Overactivity
  - Inefficiency
  - Emotional lability
Section 504 of the Rehabilitation Act of 1973
• Requires that receiving federal funding to provide reasonable accommodations to allow an individual with a disability to participate
• Students qualify for a 504 Plan if they have a presumed disability
• The term disability means that an individual has a physical or mental impairment that substantially limits one or more major activities; has a record of the impairment; or is regarded as having an impairment
• Can range from basic classroom interventions to a formal plan

504 Accommodation Plan: Supports students from preschool through post-secondary education and employment
Provides reasonable accommodations so they can benefit from education
Can include:
- Preferential seating
- Extended time on assignments or tests
- Tests in quiet setting
- Red breaks built into schedule
- Shortened assignments
- Bookscan CD or the use of text to speech software

Individuals with Disabilities Education Act (IDEA)
• Federal education mandate to provide public education through special education and related services to children with eligible disabilities
• Special education is defined as Specialized Academic Instruction (SAI) and related services and are delivered at no cost to meet the need of a child with a disability
• Individualized Education Plan starts with the assessment process to determine if the child meets criteria to receive special education support

Support and related services recommended by IEP can include:
- Adapted technology
- Speech language pathology & Audiology
- Psychological Services
- Occupational & Physical Therapy
- Parent Counseling and training
- Medical services

Linkages to Services
Injury Severity
- Minimal: 10%
- Moderate: 10%
- Severe: 10%

Referral to Special Education

Preparing for School Re-Entry
Steps for Accessing Special Education Steps and Support Services through IDEA
• Hospital and/or rehabilitation staff need to immediately inform the school that they are presently caring for one of their students
• Family and/or attending physician should formally request that the school begin the evaluation process. A release for medical records for the school should be completed
• School-based educators can then visit the student in the health care facility
• Assessment of the student’s present levels of academic and functional performance is a requirement under IDEA. This determines if the child meets criteria to receive special education support that leads to an IEP

IEP
• After reviewing the assessments and finding the child eligible for special education, the IEP team will provide information about the student’s present level of academic, achievement and functional performance
• IEP goals are then written; they should be reviewed more frequently than the required 12 month period (e.g., every 2-4 months) with changes made as needed
• Instead of the traditional 3 year assessment, individuals with brain injury require more frequent re-evaluation particularly during the first 6-12 months post injury
• The school identifies how the recommendations and services will be delivered
Services for Children in Charter and Private Schools

- A charter school is considered a public school so IDEA applies.
- For private or parochial schools, the school district where the child lives provide the assessments.
  - If the child is found eligible for services in the IEP meeting, the child has the option to leave their school and attend the public school.
  - If the parents choose to have the child remain in their private school, the school district can offer and develop a Private School Service Plan (PSSP) which provides limited service to the student.

Students with Medical Needs in the Schools

- Schools must also be prepared to address medical needs that might arise (e.g., g-tubes, seizures, headaches, etc.)
- The best plan is for the school nurse to collaborate with the student’s physician to develop Individual Health Care Plan (IHCP).
- Guides medical concerns and medical emergencies.

Within School Transitions

- Multiple transitions over the years—grade to grade, elementary to middle to high school, to graduation—can be difficult at times for any student and particularly troublesome for students with BI.
- Recognize the need for transition planning.
- Begin transition planning early.
- Assess the new environment and determine needs.
- Prepare the receiving teachers (e.g., BI in-service).
- Provide teachers with specific information about the student.
- Involve ancillary personnel (medical, psychological, rehab).
- Continuously monitor progress.

Transition to Post-Secondary Education

- If special education services were needed in high school, student is likely to need special assistance or accommodations at the post-secondary level.
- PL 101-476 (IDEA) which provided funding for special education, does not apply to college. Individuals with BI can receive services under Section 504 of the Rehabilitation Act in post-secondary settings.
- Types of accommodations are determined by individual institution.
- Evaluating an institution’s capacity to provide such services is critical.
- High school is responsible for helping the student choose an appropriate post-secondary setting if the student was injured prior to graduation.
- For students first entering or returning to college after a BI, the hospital or rehab staff should provide assistance as needed.

Transition to Work and Community

- Independent living centers, community-based advocacy agencies, and other support systems need to be involved in student’s education program before graduation.
- Transition planning team must be aware of and informed about the range of available vocational services.
- Planning should include vocational assessment and counseling to help identify suitable occupations.
- Linkages with adult service providers (e.g., social security programs, independent living centers, residential service providers) must be established during the high school years.
- Some programs have waiting lists—begin planning well in advance of the need for services.
Learning Objectives

Be able to explain the four types of blast injuries

Be able to distinguish between the causes of brain injury in combat and in peacetime

Be able to discuss the diagnostic challenges presented when a person with brain injury also has PTSD symptoms

Be able to describe the interaction and cascading effects of mTBI symptoms

Be able to give an example of neuropsychological assessment tools frequently utilized by the military to identify the areas of function which may have been affected after brain injury

Be familiar with the VA Polytrauma System of Care

Be able to summarize elements of a Community Integrated Rehabilitation program

Incidence

TBI and Concussion

Persistent Symptoms

22%

2%

TBI is the signature injury sustained in modern warfare
Causes of injury include penetrating GSW and explosive attacks
Issues unique to this population include:
- Mechanism of injury
- Co-occurring effects of deployment
- Military culture

mTBI and PTSD

- Most of the injuries are mild or concussive
- Rate of persistent symptoms low at 8%
- Most battlefield injuries are closed head injuries

Cause and Types of Injury to Military Personnel

Combat Related Injuries

- Blast events, bullet gun shot wounds and motor vehicle accidents
- Can be closed head injury
- Can be open head injury due to penetrating through dura mater
  - Foreign objects
  - Munition fragment
  - Bone
Cause and Types of Injury to Military Personnel

Peacetime Related Injuries

- Motorcycle accidents
- Falls
- Sports-related
- Training accidents
- Working in closed spaces (e.g., tanks or submarines)
- High-risk behaviors after returning from duty

Four Levels of Blast Related Injuries

<table>
<thead>
<tr>
<th>Category</th>
<th>Characteristic</th>
<th>Body Part Affected</th>
<th>Type of Injury</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td>Unique to high order explosive (HE), results from the impact of the over-pressurization wave with body surfaces.</td>
<td>Gas-filled structures are most susceptible - lungs, GI tract, and middle ear</td>
<td>Black lung, Tympanic membrane rupture &amp; middle ear damage, Abdominal hemorrhage &amp; perforation, (eye) rupture, Concussion (TBI without physical signs of head injury)</td>
</tr>
<tr>
<td>Secondary</td>
<td>Results from flying or falling debris and bomb fragments</td>
<td>Any body part may be affected</td>
<td>Penetrating ballistic (fragmentation) or blunt injuries - Eye penetration</td>
</tr>
<tr>
<td>Tertiary</td>
<td>Results from individuals being thrown by the blast wind, body impact on ground or object</td>
<td>Any body part may be affected</td>
<td>Fracture and traumatic amputation - Closed and open brain injury</td>
</tr>
<tr>
<td>Quaternary</td>
<td>Explosion-related injuries, illnesses, or diseases not due to primary, secondary, or tertiary mechanisms or complications of existing conditions</td>
<td>Any body part may be affected</td>
<td>Burns (flash, partial, and full thickness) - Cuts and lacerations - Concussion (TBI) - All injuries - Asthma, COPD, or other breathing problems from dust, smoke, or toxic fumes - Angina - Hypertension - Hypertension</td>
</tr>
</tbody>
</table>

TBI Screening

- Tests used by first responders and medics for triage to a higher level of care
- Military Acute Concussion Evaluation (MACE) developed by DVBC
- Provides gross measures of cognitive domains: orientation, immediate memory, concentration, and memory recall
- Combined with other information including LOC and PTA
- TBI diagnosis made whenever alteration in consciousness exists

Neuropsychological Testing

DOD does not prescribe specific batteries of tests

- Prior to deployment each service member completes a 20-minute computerized neuropsychological battery
- Effects of concussion can be better determined by comparing pre- and post-injury performance
- Compared if suspicion of head injury
- Helps to determine return to duty (RTD)
Neuropsychological Testing
Examples of Neuropsychological Batteries used within military

- Neurobehavioral Symptom Inventory (NSI): can be used to assess the most common symptoms experienced following TBI
- The State-Trait Anxiety Inventory (STAI) & the Automated Neuropsychological Assessment Metrics (ANAM): Mood and Sleep Scales, which provide focused assessment of mood and anxiety disturbance
- The ANAM Simple Reaction Time and Continuous Performance subtests, which objectively measure cognitive performance
- Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) measuring immediate memory, visuospatial/constructional, attention, language and delayed memory

Treatment Considerations for Concussion & mTBI

Initial Treatment
- Symptom management: i.e. headaches, vision, cognition, sleep
- Education: signs and symptoms, strategies, rest guidelines
- Therapy
- Implementation of duty restrictions for mTBI similar to sports concussion guidelines

Return to Duty Considerations
- Clinical Practice Guidelines provide recommendations for care
- Rest and RTD considerations are very important
- No one is returned until symptom free at rest and exertion
- BUT: Mission responsibilities may take precedence over recuperation and final decision is made by the Commander

PTSD and mTBI

- Individuals with TBI may have fear, anxiety, a acute stress reaction and PTSD pre-injury or may follow TBI
- 44% of service members with concussion may meet diagnostic criteria for PTSD and mTBI
- With overlap of symptoms, difficult to diagnose

Cascading Effects of mTBI Symptoms

Co-Occurring Disorders with mTBI
- They can include: chronic pain, PTSD, depression, anxiety, substance misuse
- These medical and psychological co-morbidities provide a diagnostic challenge given the overlap of symptoms
- Physical, psychological and cognitive problems associated with TBI are also aggravated by other symptoms
- Treatment focuses on symptom relief
Medical Discharge

- Process involves 2 boards: medical and physical evaluation board
- Standard used by PEB is whether the medical condition precludes the member from reasonably performing the duties of his/her office or rank
- Uses VA Schedule for Rating disabilities from 0-100%

Medical Evaluation Board
- Physical evaluation of service member's ability to meet medical entrance standards.
- This is an informal process.

Physical Evaluation Board
- This is formal process for duty and disability determination, and eligibility for disability compensation.

Returning Home

- Following medical evacuation from theater and during stabilization at a stateside military treatment facility, the treatment team will determine the medical plan of care that best meets recovery goals
- Acute management of TBI ranges from symptom management in milder cases to aggressive monitoring of intracranial pressure and brain tissue oxygenation in more severe cases
- Care also requires that logistical issues surrounding the service member's care and needs of the individual/family are addressed
- Family members' adjustment to the changes evidenced in a person with TBI can range from learning to assist with slight memory problems to caring for a bed-bound or minimally responsive individual

VA Polytrauma System of Care

- Continuum of care from 5 regional Polytrauma Centers (PRC) to 23 Polytrauma Network Sites (PNS) to Polytrauma Support Clinics (PSC) to Polytrauma Points of Contact (POC)
- As veteran recovers, goal is to transition closer to home
- Most discharge from Polytrauma Center and receive their care at a PNS
- Those with severe or complex injuries may require sub acute, post acute or long term care
- Plan developed by Polytrauma team and case manager; eventually hand case off to Seamless Transition Social worker
Community Integrated Rehabilitation and Community Re-Entry

- The Defense and Veterans Brain Injury Center (DVBIC) provides a program to enhance clinical quality, research and education across the military treatment continuum for individuals with TBI.
- DVBIC develops brain injury rehabilitation through civilian partnership programs for model community reintegration of service members with TBI.
- Those with unmet needs or with long term disability may be candidates for Community Integrated Rehabilitation (CIR).
- CIR generally referred to as post-acute rehabilitation, not sub-acute.

### Essential Facts

- Research on CIR programs showed:
  - Improved functional outcomes
  - Reduced social dependency
  - Increased participation
  - Better vocational outcomes
  - Improved self and family ratings

### Community Integrated Models

<table>
<thead>
<tr>
<th>Model</th>
<th>Participant Characteristics</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neurobehavioral Program</td>
<td>Severe behavioral disturbances; needs 24 hour supervision</td>
<td>Residential setting; Intensive behavioral treatment</td>
</tr>
<tr>
<td>Residential Community Program</td>
<td>Require 24 hour supervision or support</td>
<td>Residential setting with community access; Integrated comprehensive treatment</td>
</tr>
<tr>
<td>Comprehensive Holistic Treatment</td>
<td>Need for intensive services; Benefit from improved awareness</td>
<td>Day programs; Integrated, multimodal rehabilitation</td>
</tr>
<tr>
<td>Home-based Program</td>
<td>Able to reside at home; Able to self-direct care</td>
<td>Staff, Telephonic and web-based supports and services in Home; May need outpatient supplemental services</td>
</tr>
</tbody>
</table>

### Learning Objectives

- Be able to discuss the concept of caregiver burden with respect to brain injury.
- Be able to identify techniques that can be useful in working with families when one family member has a brain injury.
- Be able to describe the impact of brain injury on marital satisfaction.
- Be able to articulate principles of practice to use with families when one family member has a brain injury.
- Be familiar with the theoretical frameworks utilized in working with families affected by brain injury.
- Be able to give an example of current family interventions specific to brain injury.

### Background

- In the past, brain injury professionals focused primarily on needs of survivor.
- Missed importance of focusing on family assessment and intervention.
- Critical to address family members’ needs and concerns to optimize wellness for survivor.
- Key concerns include care giver burden, optimal family functioning and family needs.
Caregiver Burden

- Caregiver is typically defined as an unpaid individual who provides care services to those who cannot adequately care for themselves.
- Studies show caregivers of individuals with TBI experience chronically high levels of distress when compared to caregivers of other populations.
- Stress can result from neurobehavioral and mood disturbances associated with the injury, the overall demands of caring for the individual, lack of appropriate social supports, limited access to important resources and services, and changes within the family structure.

Caregiver Burden

- When caregiver relief is factored into treatment approaches and families learn coping strategies, negative outcomes can be decreased.
- Key issues to address:
  - Helping families develop realistic expectations for recovery.
  - Assisting families in developing hopeful or progress-focused attitudes.
  - Encouraging them to rely on other family members.

Theoretical Frameworks

Cognitive Behavioral Theory & Cognitive Behavioral Family Theory (CBT/CBFT)

- Cognitive behavioral therapy (CBT) is talk therapy that is often used with individuals with brain injury.
- Therapy is structured with the person attending a limited number of sessions.
- CBT helps the individual become aware of inaccurate or negative thinking; the person can view challenging situations more clearly and respond to them in a more effective way.
- Using Tenets, the focus of the professional is to encourage perspective taking; change in belief can result in changes in feelings and outcomes.

Theoretical Frameworks

Family Systems Theory (FST) & Family Centered Service (FCS)

- FST is grounded in the notion that the whole is greater than the sum of its parts.
- Encourages practitioners to think of interactions which occur between family members' thoughts, beliefs, and actions. Why do they influence decisions and behaviors?
- Families have shared beliefs and ways of communicating that affect the way they understand rehab goals and outcomes.
- Assumes families have strength and capacity to solve problems.
- Similar to FCS, it is about mutual respect, information sharing, participation and collaborative partnerships between the survivor and their family and providers.
- FCS emphasizes that the survivor, family, and providers are partners in health care; care should be comprehensive and tailored to the person with the injury and their family's strengths, needs, priorities, and values.

Tenets of Cognitive Behavior Theory and Cognitive Behavior Family Theory

<table>
<thead>
<tr>
<th>A Activating Event</th>
<th>B Belief</th>
<th>C Consequence of Belief</th>
</tr>
</thead>
<tbody>
<tr>
<td>Families do not have control</td>
<td>Families do have control</td>
<td>Families do have control</td>
</tr>
<tr>
<td>Examples: No control over accident; No control over medical decisions</td>
<td>Examples: This will be the end of family; We are strong and will persevere</td>
<td>Examples: End of family then poor ending &amp; hopelessness; If strong then see progress and encouraged</td>
</tr>
</tbody>
</table>
Theoretical Frameworks

Resilience Theory

- Based on notion no matter how catastrophic the event, there are always individuals and families who rise above the expected negative outcomes - they "beat the odds"
- Encompasses skill set not personality traits so it can be taught
- Skill sets include:
  - Belief systems: defined by making meaning out of adversity, maintaining a positive outlook and having an inherent spirituality
  - Family organization: includes the capacity to change, an integral and supportive connection between family members and willingness to use social resources
  - Effective communication strategies and willingness to take a collaborative approach to problem solving

Family Structures: Parents of Adults with Brain Injury

- Parents must return to their early life role of authority; difficult for both parents and child
- Over long term, parents become social outlet for their adult child as peers pull away
- Significant degree of stress across lifespan
- As parents age, face difficulty of providing care. May consider institutionalization.
- Rehab focus: listen to caregiver concerns, provide comprehensive training for in-home care, identify respite and facilitate opportunities for peer support for the individual

Family Structures: Siblings Relationships

- Siblings struggle to cope with the changes in their brother or sister; may feel resentment around attention which has shifted to the injured sibling
- Siblings' needs are at times overlooked; they experience distress, increased sibling conflict, role changes and increased responsibilities or feelings of loss related to family
- Rehab focus: they require support, information, guidance and ability to participate in family decisions. Parents should be encouraged to maintain normalcy in routines and activities, and devote special time to non-injured child

Cultural Considerations

In order to understand, communicate with, and interact effectively with families from different cultures:

- Engage in ongoing self-reflection and learning about different cultures
- Elicit family stories and perceptions of TBI
- Assess family’s help-seeking practices and views of rehabilitation
- Tailor communication and interventions to fit with the family’s customs, values, and beliefs
- Recognize the need to involve non-traditional members in the rehabilitation process
- Develop links with cultural resources
- Be open to learning new ways of being and interacting with others

Considerations for Military Families

- Military culture, particularly on base, may lead to confusion after a family member has a brain injury
- Confusion may be related to the civilian systems of care
- Injury may cause family feeling disconnected and untrusting or hesitant to access community resources and support
- Military families have pre-injury stressors even before the rehab process (i.e., relocation, deployment, functioning during the absence of their loved one and reintegration of the family member)
- National Guard and Reserves maintain non-military occupations; may be unfamiliar with military supports
- Rehab professionals should be aware of military family dynamics, possible poly-traumatic injuries, PTSD, and military systems of care
Brain Injury Family Interventions (BIFI)

- There are a number of interventions for family and survivors in literature.
- Interventions target psychological support, education, problem solving and skills training; are provided by health care professionals from licensed to unlicensed.
- Common model is the Brain Injury Family Intervention (BIFI); created to assist families in meeting the complex needs of a family member with TBI. Also has manual for adolescents (BIFI-A).
- BIFI is manualized with fact sheets, guides and readings broken into 90 to 120 minute sessions.

BIFI Training Topics and Provider Qualifications

<table>
<thead>
<tr>
<th>Sample BIFI Topic</th>
<th>Implemented by non-licensed professional</th>
<th>Back up with licensed professional</th>
<th>Licensure Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>What's normal after BI</td>
<td>Yes</td>
<td>Yes</td>
<td>X</td>
</tr>
<tr>
<td>Brain injury affects whole family</td>
<td>X</td>
<td>X</td>
<td>Yes</td>
</tr>
<tr>
<td>Coping with change and loss</td>
<td>X</td>
<td>X</td>
<td>Yes</td>
</tr>
<tr>
<td>Taking care of yourself</td>
<td>Yes</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Setting reasonable goals</td>
<td>Yes</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Focusing on gains and accomplishments</td>
<td>Yes</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Considerations for Professionals Working with Families

- Brain injury has a dramatic impact on the entire family, for the long term.
- Most people would prefer to have their former lives back.
- People do best when they are well-informed.
- Each family member has a voice and deserves respect and nearly all members have the right to make their own choices.
- Family members - most often spouses, parents, and siblings - typically take the most responsibility for helping the person with the injury in the long term.
- To be most helpful, caregivers must learn to take care of themselves and their own needs.

Techniques for Working with Families after Brain Injury

- Joining with family members and individuals.
- Active listening.
- Normalizing: can best be described as the process of letting families know that their concerns and experiences are both valid and typical given their situation.
- Positive reframing.
- Psycho-education.
- Resource referral.