

[Traumatic Brain Injury and Incarceration]

Which came first, the injury or the behavior?

Barbara Burchell Curtis
RN, MSN

[Objectives]

- **Upon completion of discussion, participants should be able to**
 - Describe the pathology of traumatic brain injury as it relates to changes in behavior.
 - Name four possible symptoms of post traumatic brain injury.
 - Discuss the components of a treatment plan for a patient with traumatic brain injury.

[Traumatic Brain Injury]

- **Definitions**
 - > CDC: a traumatic blow or jolt to the brain that results in disruption of function

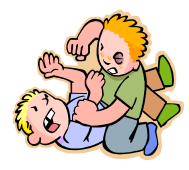
 - > American Congress of Rehabilitation: Loss of consciousness and/or post traumatic amnesia.

[Incidence of TBI]

- An average of 1.4 million people in the US sustain a brain injury
 - 50,000 die
 - 235,000 are hospitalized
 - 1.1 million treated and released from ERs
- Between 18-25 at highest risk
- At least 5.3 million are living with TBI related disabilities
- How many more are NOT seen in the ER???

[Cause of TBI]

- In the outside world,
 - MVA, falls, struck by objects and Assaults
- In the Correctional Setting
 - Assaults, struck by objects (?assault), falls



[Special Circumstances for Criminal Justice Systems]

- Anywhere from 25 to 87% of offenders have experienced a head injury
 - Only 8.5% of the general population
- Offenders who do report history of brain injury have more disciplinary problems
- Offenders who report history of brain injury have more substance abuse issues

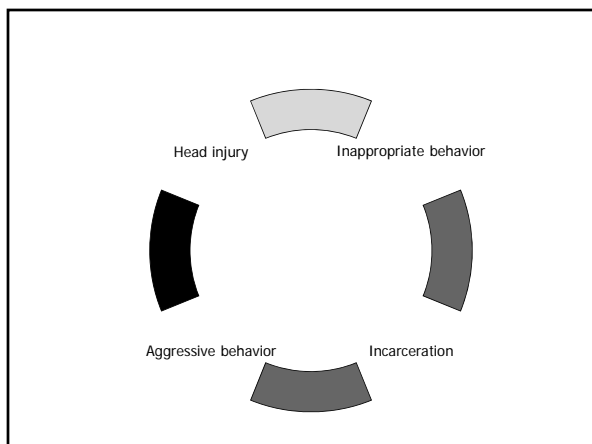
Relationship to Substance Abuse

- In the general population up to 14% of those living with a disability also experience substance abuse issues.
- Studies indicate that individuals with a SUD (substance abuse disorder) and a TBI experience heightened social, educational, and employment barriers.

Hollar 2008

Higher population of SUB in prisons

- Substance abuse issues in the prison system are common.
- Many offenders are convicted of other crimes in order to supply their substance of choice.



[In Washington State]

- Starting to gather significant real time injury data
 - Most occur due to assaults
 - Few due to falls or attempted suicides
 - Trend to more serious injuries
 - Many more minor injuries are not reported

[Commission for TBI]

- May 8, 2007 Governor Gregoire signed HB2055, an act relating to traumatic brain injury.
- Establishment of a strategic partnership advisory council to advise the governor, Legislature and Secretary of the Department Social and Health Services.

[Goal of the Commission]

- Review gaps in service and develop a plan for filling those gaps
- Includes heads of each state agency (or designee), survivors of TBI or family members, other support agencies.

Why is it a problem for Corrections?

- TBI can cause deficits that lead to disciplinary issues such as memory and focus deficits
 - Not remembering when they need to be somewhere or that they can't go somewhere in particular.
 - Inability to focus on instructions
 - Forgetting the rules
 - Poor impulse control
 - Inability to control anger or irritability

Levels of Brain Injury

- Mild -
 - 75% of all diagnosed brain injuries
 - 25% fail to obtain any healthcare
- Moderate
 - Usually get some medical treatment
- Severe
 - Often have poor outcome

Mild brain injury

- A change in mental status at the time of injury. May include mild headache, fatigue and sleep disturbance.
- Depression, anxiety, nausea, balance and emotional moods swings
- GCS 13-15
(Glasgow Coma Scale)

[Moderate Brain injury]

- Loss of consciousness lasting from a few minutes to hours,
- confusion lasting longer and
- physical, cognitive and or behavioral impairments last for months or forever.
- GCS 9-12

[Severe Brain Injury]

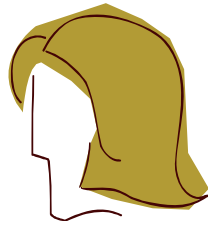
- Prolonged unconscious state or coma lasting days, or longer..
- Vegetative state,
- Locked in syndrome
- Akinetic mutism
- GCS 3-8

[Look for history of head trauma]

- Asking the right questions during history taking
- Looking for physical signs
 - Scars on the face or head
 - Any physical disability like one sided weakness
 - Speech or action difficulty
- Differentiating from malingering

[Brain Anatomy 101]

- Brain's Protection
 - Hair
 - Skin and muscles
 - Bone
 - Meninges
 - Dura mater
 - Arachnoid
 - Pia Mater
 - Fluid bathing the brain



[Brain Functional Anatomy]

- Motor areas
 - Fine motor in the cerebellum
- Sensory area



[The Pathology of Brain Injury]

- Structural
 - Contusions
 - Bleeds (space occupying lesions)
 - lacerations
 - Cerebral edema
 - Shearing of white matter



[Diffuse Axonal Injury]

- Traumatic shearing force that occurs when the head is rapidly accelerated or decelerated, as may occur in auto accidents, falls, and assaults

[Chemical Transmission Dysfunction]

- Change in neurotransmitter function may result in;
 - Changes in memory or cognitive function
 - Changes in personality
 - Attention deficits



[Frontal Lobe]

- Sequencing
- Perseveration
- Loss of spontaneity
- Loss of flexible thinking
- Distractibility
- Attention
- Concentration difficulties
- Mood Swings

[Parietal Lobe]

- Difficulty naming objects or writing words
- Can't do more than one thing at a time
- Can't focus visual attention
- Reading
- Poor hand eye coordination
- Confusing right and left.....
- Simple Math difficulty
- Drawing and visual perception
- Loss of awareness of certain body parts

[Temporal Lobe]

- Remembering names and faces
- Understanding words
- Verbalizing about objects
- Short term memory loss
- Aggressive or inappropriate behavior
- Change in sexual interest
- Visual limitations

[Occipital Lobe]

- Visual limitations
- Color recognition
- Hallucinations
- Word blindness
- Recognizing written words or drawn objects
- Loss of reading and writing skills

[Acute Brain Injury]

- Acute Symptoms:
 - Seizures
 - Neuro deficits
 - Unilateral weakness or paralysis
 - Pupillary response
 - Vomiting
 - Altered equilibrium
 - Level of consciousness
 - Vomiting
 - Visual or hearing impairments
 - Alterations in VS including widening pulse pressure, respiratory rate
 - And slowed pulse rate
 - Changes in baseline personality, confusion, aggressiveness

[Evidenced based treatment for TBI]

- Focus on symptom management
- Teaching compensatory strategies and environmental modifications

[Once Identified]

- Increased treatment for possible brain injury
- Communication with custody staff regarding potential special needs of offenders with TBI
- Special attention to impulsive behavior, including violence, sexual activity, and suicide risk.

Developing the Treatment Plan

- Specific to symptom
 - Pharmacology
 - Counseling
 - Education
 - Adaptive assistance

Tools for the Offender

- Planning calendars
- Memory diaries
- Designated “helper”
- Maps to the facility
- Practice to focus on one thing at a time
- “Clearing the mind”

Helping the offender with TBI

- Decision Making
- Problem Solving
- Essential Skills Building exercises
- Goal Setting
- Resource Finding

[Tools for staff]

- A better understanding of behavior
- New ways to communicate
- CDC Toolkit

[Management Strategies]

- Attention deficit
 - Ask the offender to repeat instructions
 - Let them write them down,
 - Allow extra time to do the task
 - Reduce distractions if possible

[Management Strategies]

- Memory deficits
 - Explains rules or directions slowly, step by step
 - Put them in writing
 - Provide examples, ask the offender to provide their own examples
 - Encourage questions

[Management strategies]

- Slow verbal or physical response.
 - Give directions clearly, repeat if necessary
 - Allow extra time to respond before giving further direction

[Management Strategies]

- Irritability or anger
 - Avoid arguing with the offender
 - Try re-phrasing the problem or breaking it down into smaller parts
 - Reinforce positive behavior

[Management Strategies]

- Uninhibited or impulsive behaviors
 - Tell the offender calmly that the behavior is not acceptable. Redirect the behavior
 - Seek assistance form mental health professionals.

Special Considerations on Release

- Community and re-entry staff should be trained to identify history of TBI and have resources to consult with
- Transition services capable of accommodating the effects of TBI
- Mental Health and substance abuse resources
- Specific TBI resources in your area.

References:

- <http://www.cdc.gov/Features/FallsAndBrainInjury/>
- [Headinjury.com](http://www.headinjury.com)
- <http://www.ninds.nih.gov/disorders/tbi/tbi.htm>
- <http://www.biausa.org/>
- <http://www.biawa.org/>
- "The Relationship between Substance Use Disorders and Unsuccessful Case Closures in Vocational Rehabilitation Agencies" Hollar 2008
- *Mental Health Weekly Digest* Liebert, Mary Ann Nov. 27, 2006

