Introduction
Partners

- HRSA- Health Resources and Services Administration
- NC Division of Mental Health/Developmental Disabilities/Substance Abuse Services
- Carolinas Rehabilitation, Project STAR
- Brain Injury Association of NC (BIANC)
Project STAR at Carolinas Rehabilitation

- Serves individuals with traumatic brain injuries, their families and professionals in Mecklenburg County and surrounding counties.
- Funded by the Department of Health and Human Services, Division of Mental Health/Developmental Disability/Substance Abuse Services and supported by Carolinas Rehabilitation.
- Houses the Brain Injury Association of North Carolina’s Resource Center at Carolinas Rehabilitation
Goals of Training

- Gain a better understanding of the connection between SA/MH and TBI
- Gain a better understanding of TBI and its causes and consequences
- Understand modifications necessary for a consumer with a TBI in a SA/MH program.
Why TBI is Especially Important in North Carolina

- National prevalence estimates 160,000 people in NC with long-term needs.

- In addition:
  - NC has the third highest military population in the U.S.
  - 33% of returning service members report symptoms of a mental health or cognitive condition. (Rand 2008)
  - 19.5% of returning service members reported experiencing a probable TBI. (Rand 2008)
  - The majority of reservists, veterans and their families seek care in the civilian community. (Citizen Soldier Support Program)
Why TBI is Important to Substance Abuse/Mental Health Programs

- Substance abuse and mental health issues occur more frequently in individuals who have a TBI than in the general population.
- SA/MH programs can expect 25% or more of their consumers to have had one or more TBIs.
Why TBI is Important to Substance Abuse/Mental Health Programs

- To be successful, SA/MH treatment needs to accommodate the client’s issues related to TBI.
Content

- TBI Overview
- TBI and Substance Abuse/Mental Illness
- More about TBI and Mental Illness
- More about TBI and Substance Abuse
- Treatment
- Resources
TBI Overview
Types of Acquired Brain Injury

- **Non-Traumatic Brain Injury**
  - Injury to the brain that occurs after birth
  - Sudden and often without warning

- **Examples:**
  - Stroke, Aneurysm, Infection to the brain, Anoxia (a lack of oxygen to the brain), Tumor, Drug Overdose
Types of Acquired Brain Injury

- **Traumatic Brain Injury (TBI)** - An insult to the brain from an external force
  - Not of a degenerative or congenital nature
  - May produce a diminished or altered state of consciousness
  - Results in impairments of cognitive abilities or physical functioning
  - Can also result in disturbance of behavioral or emotional functioning
BRAIN INJURY IS POSSIBLE EVEN IF THERE IS NO LOSS OF CONSCIOUSNESS
Classification

- Types of TBI are classified as:
  - Mild
  - Moderate
  - Severe
- However, this refers to the injury sustained, not whether there will be long term consequences.
- A person with mild TBI might recover fully, or might need long term services and supports.
Comparing Annual Incidence

- Traumatic Brain Injuries: 1,500,000
- Breast Cancer: 176,300
- HIV/AIDS: 51,334
- Spinal Cord Injuries: 11,000
- Multiple Sclerosis: 10,400

Total Incidence: 2,239,734
Traumatic Brain Injury Facts

● 1.7 million people sustain a TBI each year in the United States
● Males are about 1.5 times as likely as females to sustain a TBI
● The leading causes of TBI include:
  ● Falls (35.2%)
  ● Motor Vehicle-traffic crashes (17.3%) (50% alcohol-related)
  ● Struck By/Against (16.5%)
  ● Assaults (10%)
Approximately 46,000

Number of persons who receive a brain injury in North Carolina annually.
Hidden TBI

For every person hospitalized with a brain injury, 3-5 others who are injured do not seek treatment or receive any type of care.
Fracture

Coup

Contra Coup

Bleeding

Bruising

Brain stem swelling, tearing
SIMPLIFIED BRAIN-BEHAVIOR RELATIONSHIPS

**PARIETAL LOBE**
- Sense of Touch
- Differentiation: Size, Shape, Color
- Spatial Perception
- Visual Perception

**FRONTAL LOBE**
- Initiation
- Problem-Solving
- Judgment
- Inhibition of Behavior
- Planning/Anticipation
- Self Monitoring
- Motor Planning
- Personality/Emotions
- Awareness of Abilities/Limitations
- Organization
- Attention/Concentration
- Mental Flexibility
- Speaking (Expressive Language)

**OCCIPITAL LOBE**
- Vision

**TEMPORAL LOBE**
- Memory
- Hearing
- Understanding Language (receptive language)
- Organization/Sequencing

**CEREBELLUM**
- Balance
- Coordination
- Skilled Motor Activity

**BRAIN STEM**
- Breathing
- Heart Rate
- Arousal/Consciousness
- Sleep/Wake Functions
- Attention/Concentration

Project STAR at Carolinas Rehabilitation
The Silent Epidemic

- Limited knowledge & understanding of TBI among general society
- A person with a TBI may appear fine on the surface & may not exhibit obvious signs of an injury, so they do not seek medical treatment
- Complete recovery from the physical symptoms & yet continue to experience some lingering and chronic functional problems in an attempt to resume a normal life
- Many survivors may not even be treated for a TBI, as in cases of multiple trauma
Multiple Brain Injuries

- A person with a TBI is 3 times more likely to sustain an additional TBI.
- A person with more than one TBI is 8 times more likely to sustain additional TBIs.
No One is Immune from Sustaining a Traumatic Brain Injury
Improvements In Prevention and Acute Treatment

- Preventative Measures
  - Seatbelts, child safety seats, airbags and helmets
- Better Emergency Response System
  - 911, Med Center Air
- Improved Medical Technology
  - Intracranial Pressure Monitor
Changes in Lifestyle After TBI

- Employment
- Restrictions on Recreation/Sports
- Relationships
- Grieving Process
- Time Management
Possible Consequences of Injury

- Physical
- Cognitive
- Communication
- Behavioral and Emotional
Physical Consequences

- Seizures
- Fatigue
- Change in sleep pattern
- Balance and coordination difficulties
- Muscle spasticity
- Headaches
- Weakness or paralysis
- Changes in vision or hearing
- Changes in sensation
Cognitive Consequences

May Include:

- Short and long-term memory loss
- Planning and organizational difficulties
- Difficulty with reasoning, problem solving, and decision making
- Difficulty initiating activities
Communication Deficits

- Difficulty initiating conversation
- Difficulty finding words
- Difficulty taking part in a conversation
- Unaware of other’s or own body language
Social Skill Impairments

- Appropriate voice tone for the situation
- Eye contact
- Body Language
Psycho-social and Emotional

- Decreased affect and emotional responsiveness
- Emotional lability
- Anger and aggression
- Anxiety
- Depression
- Loneliness and social isolation
- Egocentricity
Executive Functions

- Integrative cognitive processes by which people manage, monitor, and regulate the execution of goal directed behavior
- Judgment - decision making
- Self Awareness - monitoring
- Motivation - initiation, goal formulation
- Self Regulation - ability to inhibit
Red Flags: Things to Look For

- Difficulty staying on task
- Decreased ability to process information or read
- Decreased comprehension
- Decreased ability to follow directions
- Difficulty with problem-solving
- Initiation problems and difficulty following through
- Poor insight
Red Flags: Things to Look For (cont’d)

- Missing appointments or meetings
- Dominates the conversation
- Tends to be argumentative
- Disrespectful of others
- Misses social cues such as body language awareness, voice tone, sarcasm etc.
Brain Injury Is Unpredictable In Its Consequences. No Two Brain Injuries Are Identical
The Relationship Between TBI and Substance Use Disorders/Mental Illness
TBI/SUD/MH

- **Pre-Injury Diagnosis:**
  - 52% received a psychiatric diagnosis
  - Major Depressive Disorder (17%)
  - Anxiety (13%)
  - SUD (41%)

- **Post-Injury Diagnosis:**
  - 65% Received a psychiatric diagnosis
  - Major Depression (45%)
  - Anxiety (38%)
  - SUD (21%)
Studies

- Consumers who sustained a TBI in childhood first used alcohol at a younger age (12 vs. 15 years old) (Corrigan 2008)
- The younger the age of first TBI, more difficulty in treatment (Corrigan 2008)
- More likely to have co-morbid psychiatric diagnosis (29% vs. 18%) and hospitalization for mental illness (20% vs. 11%) (Sacks 2009)
Study of TBI in Adolescents

- 750 incarcerated youths were interviewed:
  - Those with TBI
    - More likely to have psychiatric diagnoses
    - Earlier onset of criminal history and substance abuse
    - Increased suicide

(Perron & Howard, 2008)
TBI and Mental Illness
TBI and Mental Health

- Those with TBI attempt suicide 4 times more often than those with no brain injury
- Suicide is 21 times more likely in those with combined TBI, substance abuse and major depression
- Children with TBI are at increased risk for social failure as they mature into adulthood. TBI in children is associated with poor academic performance as well as behavior problems

Unidentified Traumatic Brain Injury, Issue 2, May 2006
Factors that have an Impact on Mental Health after a TBI

- Thoughts and emotions can change following a TBI
- Chemical changes occur in the brain
- Difficulty fitting in socially and decreased self esteem
- Strained relationships
- Change in financial status and employment
- Too much time on hands
TBI and Co-Occurring Conditions That Present As Mental Health

- Agitation/Irritability
- Anxiety
- Apathy
- Attention Disorder
- Denial/lack of awareness
- Depression
- Emotional Lability
- Paranoia
Common Misdiagnosis

- **DSM IV**

  **Axis 1:** Clinical Disorders including major mental disorders and learning disorders

  **Axis 2:** Personality Disorders and Mental Retardation

  **Axis 3:** Acute Medical Conditions and Physical Disorders
Complications Related To TBI And Mental Health Issues

- Many times a person with a TBI is misdiagnosed with mental health issues that are actually characteristics that correlate with TBI.
- Many individuals with a TBI incur mental health issues following their TBI.
- “Psychotropic medications used to manage agitation and aggression in people who have had a traumatic brain injury should be carefully selected for their side effect profiles, and the use and effectiveness closely monitored.” (AHRQ guidelines)
TBI and Substance Use Disorders
Understanding the TBI/SA Correlation

- Substance use and abuse can lead to a TBI:
  - Over 50% of all incidents leading to a TBI involve alcohol
  - The disease of addiction affects many TBI survivors before their injury occurs
  - 67% of TBI survivors in brain injury rehabilitation report a history of substance abuse prior to their injury
Understanding the TBI/SA Correlation

● Substance use and abuse can also develop after a TBI occurs:
  ● More than 1/3 of adult substance abusers entering drug and alcohol treatment facilities reported at least one TBI with loss of consciousness
  ● As many as 20% of TBI survivors become vulnerable to substance abuse problems post injury
SUBSTANCE ABUSE AND TBI CYCLE

Substance Use/Abuse

- Lifestyle Changes
  - Job Loss
  - Relationships
  - Leisure Activities
  - Depression

Poor Decision Making
High Risk Activities
Poor Balance

Traumatic Brain Injury
Increased Risk for Substance Abuse

- Pre injury factors involving substance use/abuse
- Self-medication, response to depression, changes in mood
- Boredom, loss of leisure interests, withdrawal and exclusion
- Family difficulties
- Loss of peer group and social network
Co-occurrence

- Substance use is associated with the likelihood of injury and incurring a TBI
- History of a SUD is associated with a more severe TBI
- After a “honeymoon” period substance use may return to pre-injury patterns
- Association with unemployment, criminal activity and decreased overall well being
Subsequent Use

“A person with a pre-injury history of two drinks a day would not have had a reason to seek alcohol related treatment before his or her accident. But once that same person becomes brain injured, the continuation of that drinking pattern has the potential to cause major problems.”

(Robert Karol, Ph.D., L.P., A.B.P.P., Director, Psychology/Neuropsychology and Brain Injury Services, Bethesda Hospital, St. Paul, MN)
Prescribed Medication

- A variety of medications might be prescribed for treatment of a TBI
- Complications and risks occur when mixing alcohol and other substances with prescribed medications
TBI And SA - Complex

- More admissions=more failures
- More DSM-IV diagnoses
- More complex diagnoses
- Many with multiple injuries

(Sacks, et al., 2009)
Decreased Recovery Process

- Recovery is about relearning and making new connections with neurons. Alcohol and other substances impair the brain's ability to recover.
More Powerful Effect

- Less alcohol to impair the brain
- Not as many neurons to absorb alcohol and other substances
Seizures

- Alcohol increases the risk of seizures for an individual with a TBI
TBI and SA: Co-Occurring Conditions

- Short term memory loss
- Impaired thinking
- Difficulty with balance and coordination
- Impulsivity
- Mood disturbances

- Personality changes
- Diminished judgment
- Fatigue
- Depression
- Sleep problems
- Decreased frustration tolerance
Cognitive Aspects of Sobriety

- Staying sober or substance free requires a number of “executive” function
  - Self-monitoring
  - Use of knowledge to guide behavior
  - Impulse Control
  - Learning from negative feedback
  - Reflection/Empathy
WHY CLIENTS WITH THIS CO-OCCURRING CONDITION FALL THROUGH THE CRACKS

- Clients often lack insight and awareness of the problem and its seriousness
- Symptoms of Brain Injury and Substance Abuse can present in similar ways and may go unidentified
- Family members may be overwhelmed and not ready to address one more issue
- The effects of a Brain Injury can be invisible but they may prevent consumers from successfully following a substance abuse program
- Consumers with Brain Injuries may lack the initiative necessary to begin Substance Abuse programs
Screening

Screening Barriers,
Additional Information
HELPS
Why Screen For A TBI

- TBI is usually not a visible disorder
- Some people may not know that they have had a TBI
- Documentation of a history of TBI may not be found in medical records
- The effects of a TBI can have a significant impact on responsiveness to standard services or treatment methods
Who Should Be Screened

Everyone is at risk, but especially persons who:

- Have a substance use or mental health disorder
- Spent time in jail or prison
- Participant in contact sports or activities
- Victims of physical abuse or placed in foster care
- Victims of Domestic Violence
- Homeless population
- Served in the military
Barriers in Screening

- Denial
- Self Perception
- Subtle but significant cognitive deficits
- Verbal Vs Performance IQ
- Inability to Effectively Communicate
- Behaviors
Screening Tools for TBI

• Collect information from as many sources as possible

• Review of additional records: medical (history/physical, social work, neuropsych, speech therapy, D/C planning), educational, criminal, employment

• Collateral Interview; family and friends, physicians, clinicians
The HELPS Screening Tool

- H- Hit Head
- E- Ever been to the Emergency Department
- L- Ever had Loss Of Consciousness
- P- Any Problems in your daily life
- S- Any Significant Sicknesses
Treatment

Physical, cognitive, communication and/or behavioral and emotional difficulties may be due to the TBI
KEY POINTS

- Consumer may lack insight as a result of the injury and may not recognize their cognitive and behavioral deficits
- Spend time and effort learning the consumers communication and style of learning
- Address necessary modifications
- Do not assume that non-compliance arises from lack of motivation or resistance. Check it out with the consumer
Prior To Treatment

- Consistent schedule (day, time and provide the client and significant other a written schedule)
- Organizer for all important information related to treatment
- Arrange for transportation
- Follow up phone call or email to encourage follow through
How A Consumer With A TBI May Present In a Treatment Program

- Miss sessions
- Difficulty identifying with the group
- Miss information and have difficulty keeping up
- Ask about material already covered
- Get stuck
- Poor follow-through on homework and assignments
- Difficulty with social cues
- Come across overly personal or blunt
- Difficulty with new information
Barriers To Success In Traditional Treatment

- Memory
- Judgment
- Problem Solving Skills
- New Learning
- Emotional Control
- Reduced Self Esteem
- Denial
- Motivation

- Decision Making
- Attention
- Thought Flexibility
- Social Skills
- Behavior Control
- Frustration
- Coping Skills
- Self Perception
Beginning to Work with the Client In SA Treatment

- Screen all SA clients for TBI. Remember this is a screen, not an assessment.
- Collaborate with other providers. Help set up a medical evaluation if needed.
- Make appropriate referrals.
- Cross train staff in any conditions that may impact recovery from chemical dependence, TBI or other difficulties.
- Talk with clients to see if they are aware of problem areas.
- Assess for strengths and weaknesses. Support the coping skills the client already has.
• Assess for other co-occurring disorders such as anxiety, PTSD or depression. The suicide rate for TBI clients is increased by two to four percent above the general population.

• Proceed in a manner which conveys belief that the client can get better.

• Educate clients on the use of alcohol and other drugs have on recovery from TBI.

• Help the client develop a support system. Involve family as much as possible.

• **Teach** clients how to make use of 12 Step meetings.
Compensatory Strategies for Memory and Cognitive Difficulties

- Use of planner, tape recorder, check list, palm pilot
- Timers, wrist watch alarms or talking watches can provide prompts
- Step-by-step written instructions and verbal instructions
- Structured environment and developed routines
- Use check off sheets (easy to self-monitor and reference back)
- Post simple reminder signs for prompts
Strategies

- Be aware of and work with stages of change. **Roll with resistance.**
- Try not to assume that lateness, missed sessions, or inappropriate behaviors are a result of low motivation. Problem solve.
- Call Clients who are absent from treatment. Ask how you can help them to get to treatment consistently. Help them in setting up their own strategies.
- Contract clearly and in understandable language for wanted behaviors.
- Be clear about unwanted behaviors- put them in writing.
- Motivational interviewing, CBT and DBT are therapies that can be used, but may need to be modified to fit the abilities of the client.
- Use a variety of teaching styles and try to determine the style that will best assist the TBI client.
- Set up help for clients that can not read or write.
Working With Clients

- Keep the schedule as consistent as possible. Write the schedule where it can be seen. List approximate times for education, breaks, and therapy. Stick to this schedule.
- Write the topic and important points where clients can see it and refer back to it.
- Calmly let the TBI client know when they have said or done something inappropriate. Set up a “signal” you can use to let the client know something they are doing is not acceptable. Ask if you can bring the rest of the group on board to help.
- **Be concrete.** Abstracts tend not to work well for clients with TBI, MI or cognitive disabilities.
- Journals, daily planners and written reminders can be very helpful.
- Make sure the subject for educational sessions is written where the client can see it.
Working With Clients

- Use information cards for clients with memory impairment.
- In group, gently remind the client of the topic if they appear lost. Again, enlist the help of the other group members.
- Keep noises and disruptions to a minimum.
- Provide breaks.
- Be aware that the attention span of the TBI client may be short.
- When teaching new skills, Repeat, practice, repeat, practice, repeat.
TBI and SA Treatment

- Quality substance abuse recovery depends on quality treatment of the whole person and all of his or her difficulties or issues. A problem in one area, such as mental illness or TBI, can not be separated from problems with substance abuse. When symptoms of one condition are out of control, other conditions often go out of control as a result.

- The most important factor in positive client outcomes is the relationship between the counselor and the client.
Compensatory Strategies for Communication Difficulties

- Rephrase the question
- Give extra time to respond
- Ask open-ended questions
- Cue by using the first sound of the word
- Pre-arrange a signal/cue to indicate when conversation is being dominated
- Ask the person how their comments relate to the topic
Compensatory Strategies for Communication Difficulties

- Let the individual know of your difficulty following their conversation
- Model clear topic changes for the individual to observe
- Respectfully inform individual when he/she has made the same comments or shared the same story several times
- Use appropriate volume and tone for the situation
Compensatory Strategies for Addressing Behavioral Difficulties

- Do not ignore the behavior
- Provide on-the-spot feedback
- Benefits of group intervention
- Never reinforce the behavior
- Be specific about why change is needed
- Provide a positive model for behavior
- Teach social interaction skills
- Provide positive feedback
Helping a Person with TBI in a Group Format

- Review prior material at beginning of session (repetition)
- Small group size
- Quiet environment with low stimulus
- Written materials to support discussion
- Structured instruction
- Frequent rest breaks
Helping a Person with TBI in a Group Format

- Slow down in sessions
- Simplify language
- Modify written material to make it concise--to the point
- Present ideas in small bites and provide concrete examples
- Encourage note taking if this helps
- Allow extra time or individual time
- Meet individually after group sessions to review salient points--write these down
Is the 12-step Model Appropriate for a Consumer With a TBI?

- Modify expectations for medical purpose
- Accessibility and frequency of meetings is a plus
- Supportive contacts and network
- Easily remembered slogans for reminders
- See revised AA 12-Steps
Helping a Person with A TBI Transfer What They Have Learned to Their Daily Lives

- Rehabilitation providers and family members must actively reinforce and support the consumer to follow through on new routines and behaviors.

- Discharge planning should include caretaker training & referral to community TBI services/supports.
Resources
Discharge Planning

The Brain Injury Association of NC has:

- A list of community practitioners trained in TBI
- A list of TBI programs in NC
- Brain Injury Resource Centers to help find community resources
- Trained ombudsmen
- Over 30 local brain injury support groups

Assistance from the DMH/DD/SAS state TBI Program, accessed through LMEs
To Learn More in NC

- Free Online Training with Certificate
  - [www.nctbitraining.org/](http://www.nctbitraining.org/)

- Information about the DMH/DD/SAS TBI Program:
  - [www.ncdhhs.gov/mhddssas/services/tbi/index.htm](http://www.ncdhhs.gov/mhddssas/services/tbi/index.htm)

- TBI & Servicemembers, Veterans, Families
  - [www.veteransfocus.org/](http://www.veteransfocus.org/)

- Brain Injury Association of NC
  - [www.bianc.net/](http://www.bianc.net/)
To Learn More Nationally

- Ohio Valley Center for Brain Injury Prevention and Rehabilitation www.ohiovalley.org
- Brain Injury Association of America www.biausa.org
- Brain Injury: *A Practical Training for Substance Abuse Treatment Professionals*: The Department of Human Services and The Brain Injury Association of RI, Inc
- Brain Injury and Substance Abuse: The Cross-Training Advantage, funded by the Ontario Neurotrauma Foundation
Other Ways to Help

- Continue to offer support and understanding to persons with brain injuries and their families
- Become knowledgeable about the issue of brain injury
- Become a member/supporter of BIANC
- Advocate for statewide services
- Support efforts to reduce preventable brain injuries
Training Contacts:

- **Project STAR, Carolinas Rehabilitation**
  1100 Blythe Blvd., Charlotte NC 28203
  704-355-1502
  877-962-7246

- **Brain Injury Association of NC**
  www.bianc.net
  1-800-377-1464 (Statewide Family Helpline)
  shawn.chase@bianc.net