



Peer Specialists Fall 2020 Brain Injury Series

Part I Brain Injury Overview

Martin Kerrigan & Anastasia Edmonston



What do these people have in common?



Why is it important for Peer Specialists to have a working understanding of brain injury? *why this series matters*

- People who use drugs and alcohol often have a history of a brain injury
- People with a history of mental health challenges are often have a history of brain injury
- People who use drugs and alcohol are at a high risk of incurring a traumatic brain injury (falls, violence, accidents) AND those who use opioids are at high risk of acquired brain injury from overdose(s)



Why is it important for Peer Specialists to have a working understanding of brain injury? why this series matters

 Being brain injury informed is one tool professionals, advocates family members, friends can use in order to support people in a holistic and person centered way

 Being brain injury informed includes knowing where to obtain more information, tips and resources to help those who may be living with a hidden or not so hidden history of brain injury



TBI Overview

Introductions and Brainstorm



By the end of this training participants will:

- Become familiar with types and causes of brain injury
- Understand who is impacted by brain injury

 Understand how living with a brain injury can impact physical, thinking and social/emotional health and well being



Getting to Know You — Respond in the chat

- Please state your name
- Where do you work and what is your role?



Questions – please answer in the chat

1. What do you know about Brain Injury

What do you *want* to know about Brain Injury



Poll Question: Have you ever supported an individual you know or suspect are living with a history of Brain Injury?

Yes

No



TBI vs. ABI

TBI Defined	ABI Defined
Traumatic Brain Injury (TBI) is an insult to the brain caused by an external physical force, such as a fall, motor vehicle accident, assault, sports-related incident, or improvised explosive device (IED) exposure	Acquired Brain Injury (ABI) is an insult to the brain that has occurred after birth, such as TBI, stroke, near suffocation, infections in the brain, or anoxia and opioid overdose(s)

*Both mechanisms of injury can result in a chronic disability that may get worse with age.



Acquired Brain Injury Secondary to Overdose

What is known and observed regarding the impact of opioid overdose and the brain:

- Sudden loss of oxygen to the brain has the greatest effect on parts of the brain that are high oxygen users such as the hippocampus, basal ganglia and frontal region among others
- These areas of the brain are oxygen "hogs" and are critical to memory, learning and attending to new information, problem solving and the ability to manage our emotions and impulses — in other words, they are responsible for our adult thinking skills aka "executive functioning"



11

Acquired Brain Injury Secondary to Overdose

The ability to self-regulate is notably impacted by both Traumatic and Acquired Brain Injury When these critical areas are damaged, the functional manifestations can include:

Lability, impulsivity, irritability, and apathy



12

An Overdose Can Lead to Brain Injury!

While not every survived overdose leads to an acquired brain

injury, researchers and clinicians are looking at the intersection

of traumatic brain injury, problematic opioid use and opioid

related overdose.

We will explore this more thoroughly next week.



As more individuals thankfully survive brain injury, research is looking at the potential implications of aging with a history of brain injury.

"Injury to the brain can evolve into a lifelong health condition termed chronic brain injury (CBI). CBI impairs the brain and other organ systems and may persist or progress over an individual's life span."



TBI: A Chronic Condition

A longitudinal study of the TBI Model Systems cohort (N=6,913) found those who received inpatient rehabilitation at a specialized brain injury center have a reduced life expectancy:

- People were 2.23 times more likely to die than those of comparable age, sex, and race in the general population
- Reduced life expectancy of nine years
- People are at higher risk of dying from seizure (although this is relatively infrequent cause of death)
- External causes of death include: Fall, accidental poisoning, homicide, motor vehicle accident, and suicide



Source: Harrison-Felix C., Pretz C., Hammond, FM., Cuthbert, JP., Corrigan, J., Miller, AC., Haarbauer-Krupa, J. (2014) Life Expectancy after Inpatient Rehabilitation for Traumatic Brain Injury in the United States. J. Neurotrauma.31:1-9.

What might it feel like to be living with a condition that makes it hard to follow directions?

Writing and processing exercise



Let's Discuss! (We will ask you to respond to each question, one at a time in the chat)

- How did that feel?
- How do you think your mood, self-confidence and self-esteem would be affected if you had found you couldn't do things you had done for your whole adult life and done well and now you couldn't, or you could do those things, but it takes you a lot longer or you are now unable to do it?
- How do you think others might perceive your skills, knowledge and abilities after such a change in your competency? (especially if your brain injury left you with no obvious disability)



Brain Injury Fast Facts

- In 2013, 2.8 million Americans were treated in Emergency Departments (ED), hospitalized, or died as a result of a TBI.
- The brain reaches its adult weight of 3 pounds by the age of 12.
- The adult brain reaches cognitive maturity by the mid-20s.
- The last part of the brain to develop is the frontal lobe.



Brain Injury Severity

Distribution of severity:

- Mild injuries = 80 percent (Loss of consciousness (LOC) < 30 minutes, post traumatic amnesia (PTA) < 1 hour)
- Moderate = 10–13 percent (LOC 30 minutes to 24 hours, PTA 1 to 24 hours)
- Severe = 7–10 percent (LOC >24 hours, PTA >24 hours)



Beyond the Invisible- documentary

What does Traumatic Brain Injury (TBI) look like? Beyond the Invisible narrated by Lee Woodruff <u>https://youtu.be/ePJgU2LFU-g</u>

*Also found on <u>www.BrainLine.org</u>



Let's Discuss: We will ask you to respond to each question, one at a time in the chat

• Name one brain injury related challenge that Tracy is dealing with after his injury

• Name one brain injury related challenge that Brian is dealing with after his brain injury

 Name one brain injury related challenge that Eddie is dealing with after his brain injury



Let's Discuss: We will ask you to respond to each question, one at a time in the chat

- Name one challenge that Brian's wife Michelle is dealing with after her husband's brain injury
- Name one challenge Eddie's family is dealing with after their son's brain injury



Lightning Round: Place your answer in Chat

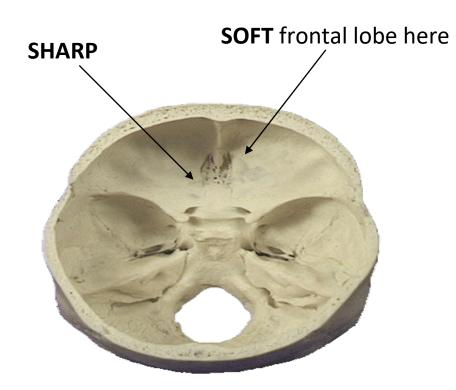
A brain injury can be caused by which of the following?

- 1. a concussion
- 2. an opioid overdose
- 3. an aneurysm
- 4. all of the above



Brain Injury - The Skull

Many of our adult thinking skills reside in the frontal lobe; the frontal lobe is very vulnerable to injury.

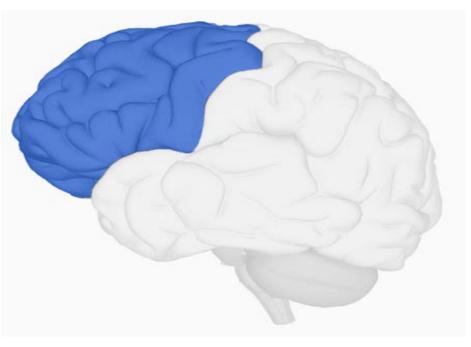




The Frontal Lobe

The frontal lobe is the area of the brain responsible for our "executive skills," or higher cognitive functions. These skills include:

- Problem solving
- Spontaneity
- Memory
- Language
- Motivation
- Judgment
- Impulse control
- Social and sexual behavior





Frontal Lobe Injury Consequences

- Frontal lobe injuries, even those that occur in childhood, can cause long term problems in thinking, responding and behaving
- It's important for peer specialists to know this since it can explain some of the current behaviors peer specialists may encounter.
- Signs of brain injury can look a lot like other behavioral health conditions



The Frontal Lobe

"... What takes a little longer to develop are the connections between areas like the prefrontal cortex, that regulate thinking, and the limbic system, where emotions largely stem from, as well as biological drives you could call "the four F's fight, flight, feeding, and ffff... fooling around."

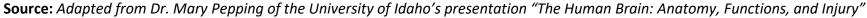
Source: James Griffin, the deputy chief of the National Institute of CCHD's Child Development and Behavior Branch, quoted in Julie Beck's 2016 article in The Atlantic entitled "When are You Really an Adult?". <u>https://www.theatlantic.com/health/archive/2016/01/when-are-you-really-an-adult/422487/</u>



The Temporal Lobe

The temporal lobe plays a role in emotions and is also responsible for smelling, tasting, perception, memory, understanding music, aggressiveness, and sexual behavior.

The temporal lobe also contains the language area of the brain.





Brain Injury

For peer support specialists, the behavioral impact of damage to the frontal and temporal lobes can be a factor during interactions with people who otherwise appear "normal."

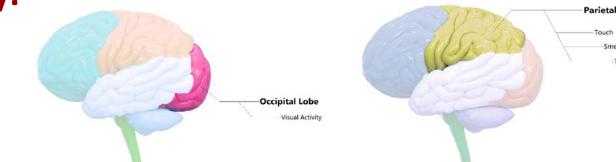


TBI and ABI "Fingerprints"

There are two other lobes in the brain, the occipital and the parietal lobes.

Our frontal lobe and the temporal lobes are key to managing behavior and emotions.

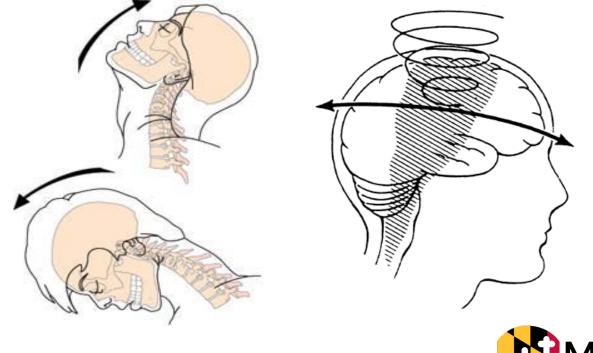
Thus, damage to these regions can contribute to mental health and/or addiction problems. Damage to these lobes due to a TBI from a car accident or from a serious overdose is considered the **"Fingerprint of Brain Injury."**





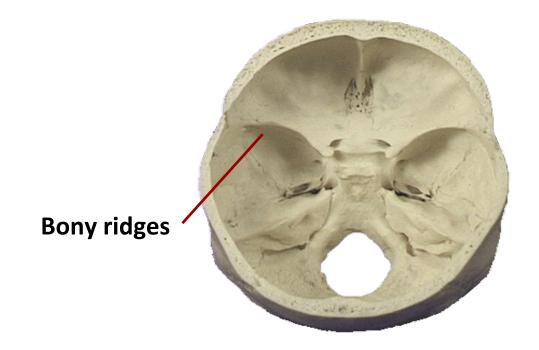
Sustaining Injury

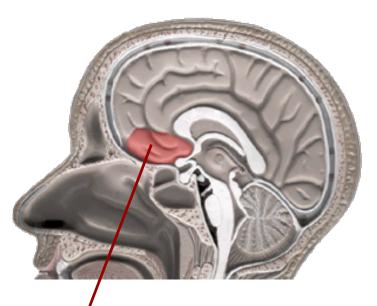
With a TBI from an external blow or force, the brain is set into motion along multiple axial planes.





Interior Skull Surface





Injury from contact with skull



Recognizing Brain Injury

Civilian risk factors for TBI include:

- Males 2:1 more than female
- Very young and very old due to falls
- Adolescents and young adults due to intentional injuries (e.g., falls, unintentional poisoning, self-harm, assault and moving vehicle crashes)



How big is the problem?

According to the CDC up to 15% of "mild" TBIs result in long term consequences!



Source:cdc.org

Groups who may have multiple mild TBIs include:

- Athletes especially boxers, football players, and hockey players
- Victims of intimate partner violence and childhood physical abuse
- People who misuse and abuse substances
- People who are homeless
- People with mental illness
- People in the criminal justice system



Brain Injury by the Numbers

Among TBI-related deaths in 2014:

- Rates of TBI were higher for persons 75 years and older—*Why*?
- Falls were the leading cause of death for persons 65 and older
- Intentional self-harm was the leading cause of death for persons 25 to 64—*Why?*
- Motor vehicle crashes were the leading cause of death for persons ages 5 to 24
- Assaults were the leading cause of death for children ages 0 to 4



Brain Injury by the Numbers

Among non-fatal TBI-related injuries in 2014:

- Rates of ED visits highest for those 75 and older and children 0 to 4
- Falls were the leading cause of TBI related ED visits for all but one age group
- Being struck by or against and object was the leading cause of TBI related ED visits for those 15 to 24
- Falls were the leading cause of hospitalization among children 0 to 14 and adults 45 and older
- Motor vehicle crashes were the leading cause of hospitalizations for adolescents and persons 14 to 44 years of age



Common Physical Challenges after Brain Injury

Injury-related problem	How it may affect a person functionally
Coordination	Unsteady gait, poor eye-hand coordination, slow or slurred speech, tremors, paralysis
Visual Deficits	Staring or poor eye contact, blurred or double vision, inability to follow an object with their eyes
Additional Physical Challenges	Seizures, deaf or hard of hearing, fatigue
	Marvlan

DEPARTMENT OF HEALTH

Common Cognitive Challenges after Brain Injury

Injury-related problem	How it may affect a person functionally
Memory	Trouble following directions, providing requested information, making appointments
Processing (receptive)	Understanding what is being said and reading
Processing (expressive)	Trouble putting thoughts into words — tip of the tongue syndrome
Problem solving (related to frontal lobe and temporal tip injury)	Impulsive, easily frustrated, sexually disinhibited, verbally/physically combative, interpersonally inflexible, poorly organized



Common Behavioral Challenges after Brain Injury

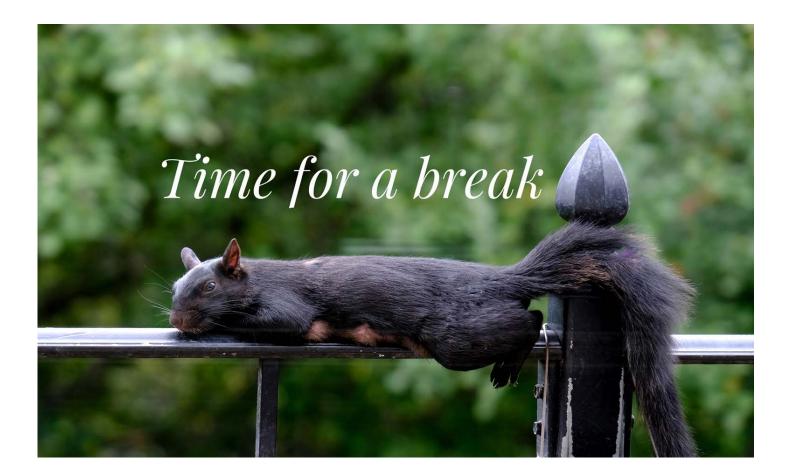
Injury-related problem	How it may affect a person functionally
Depression	Flat affect, lack of initiation, sadness, irritability
Unawareness	Unable to take social cues from others
Confabulation	"Making up stories"
Perservation	Gets "stuck" on a topic of conversation or physical action
Anxiety	Can exacerbate other cognitive/behavioral problems



Before we break, are there any questions about anything we have covered so far?



Break Time! Take 10 minutes to stretch etc.





Reduced or NO Awareness of the functional implications of injury imposed barriers

For example, the injury has left the person with difficulty moving the right side of their body, they drag their right foot and their fingers can't grasp objects. Despite what seems to be an obvious disability, they insist they can drive without any accommodations or modifications to their car.



Levels of Awareness

• Intellectual Awareness: "My memory is so bad" but can't link that awareness to using such strategies as keeping a calendar so appointment aren't missed

• Emergent Awareness: Individual is able to recognize a problem when it is actually happening "Darn it, I knew I should have taken a picture of the parking space number" (as they are wandering around the parking garage)



Source: Crossen et.al (1989) J Head Trauma Rehabilitation

Levels of Awareness

• Anticipatory Awareness: individual is able to anticipate a problem will occur and plan for the use of a particular strategy or compensation that will reduce the chances that a problem will occur, e.g., keep and refer to a calendar, take a picture of the parking space number and/or park in the same general area each time they go to the mall



There are other clues that may indicate a person may be living with a history of brain injury

- You may observe scars on an individual's forehead, neck, face
- The individual is unsteady on their feet, limps or drags one foot while walking, may use a cane, walker or wheelchair
- Speech is slurred
- Individual is wearing an eye patch, or they have what looks like a diamond cut lens in one side of their glasses
- The individual denies problems or challenges that are clear to others
- Individual seems to have difficulty making eye contact or looks like they are not paying attention to you

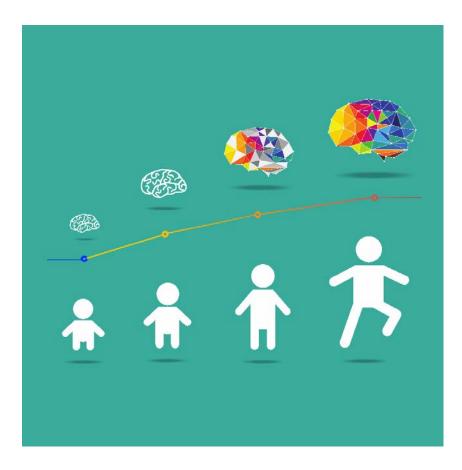
Common Challenges after TBI Imagine How You Might Feel if...

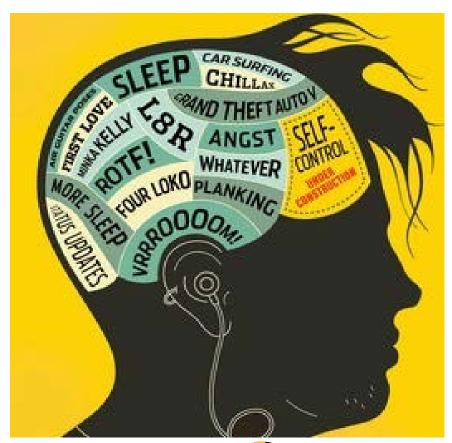
- You have no trouble remembering your childhood, but you can't remember; the last paragraph of that book you are trying to read, the conversation in the grocery store with your neighbor....only 5 minutes ago!
- You know what you want to say, but you can't pull the words together, and by the time you do, the moment has passed (conversation has moved on)
- Feel sad, depressed, irritable and/or more anxious more than usual
- The littlest thing makes so you angry you feel like screaming or throwing something (and when you are tired and frustrated, you hand your family walks on eggshells around you)

Next week we will explore childhood brain injury and subsequent behavioral health challenges and consequences in depth. Today we set the stage for that discussion...



Brain Injury: Growing into Brain Injury ...







"Consequences are particularly related to impulsivity and self-regulation"

John Corrigan Ph.D.

Remarks at the September 2018 National Association of State Head Injury Administrators conference, Des Moines Iowa, regarding the consequences of childhood brain injury.



Brain Injury... What comes next?

After an individual sustains a brain injury there are many factors that play into where that person goes and what happens to them, this includes if the individual and those around them are aware that they may have incurred a TBI ("just got his bell rung"). Some of these factors include:

- Severity
- Geographic location
- Funding/Insurance
- Personal/Family decisions
- Type of injury
- Availability of medical facilities/professionals/etc.



So you survived a brain injury, now what?

- Depending on many circumstances you may or may not get the necessary rehabilitation/services you require. These services may include:
 - □Vocational therapy
 - □Cognitive remediation
 - □Physical therapy
 - Occupational therapy
 - □Transportation/mobility
 - □Access to assistive technology
 - □ Special education
 - Case management



The reality is...

Services:

Vocational therapyCognitive remediation

 Physical therapy
 Occupational therapy
 Transportation/mobility
 Access to assistive technology
 Special Education
 Case Management

Barriers:

 Funding/Insurance
 Regulations
 Willingness to ask for/seek help
 Limitations

❑Availability
❑Awareness



Who works with individuals with brain injuries?

- Physical Therapists
- Occupational Therapists
- Psychologists, Psychiatrists, Therapists
- Vocational Counselors
- Doctors, Nurses, and other Medical Professionals

- Teachers
- Probation and Parole officers
- Social Workers
- Police Officers
- Judges
- Crisis response professionals
- Prosecutors
- Addiction and Mental Health professionals



And...

Peer Specialists!!!



The Take Away — Never Say Never!

Even those many years post injury can benefit from brain-injury informed support and treatment!



Back to School...

One individual's return to "the real world" after a Traumatic Brain Injury (TBI)





INDEX

	ary	1
Classified		
Comics/C	rossword/Horoscope	

WEATHER

Today: Sunny/low 80s Tonight: Clear/50s Tomorrow: Sunny/mid 70s

89" YEAR MONDAY, SEFTEMBER 28, 1998 NO.20 he llamondhack

YOUR INDEPENDENT STUDENT NEWSPAPER . UNIVERSITY OF MARYLAND, COLLEGE PARK

SPORTS

The unranked Terrapin men's soccer team grabs a 3-2 overtime victory against No. 1 Duke at Ludwig Field. Page 8



Man is killed crossing Route 1

ACCIDENT SCENE

The second second

Sec.

Between 10 and 11 p.m. Friday, 2 mart sous list by a car and lighted actuals crossing the street at the reservedue of Route 1, Repents Drive and College Avenue. Prince: George's County Police and Witnesses and the mast land is Crossis of percente mesor-crossing Palarbe 1 accessor is spinners light subary Longation a silver Hunda Peelade struct the start to like recetting and later-

Accident: Witnesses say the victim and a group of people crossed the street against a green light.

BY LEGA Propression. Disputchently shall writer

A man was killed Friday meter when a sover Humain Protode travel. ing north on Houte 1 struck him hetween 10 and 11 p.m., and Prince George's County Philics spatherwoonan Cpl. Diaror Rithmedices.

Witnesses said the victors manormaing Houte Lagainst a green light with a we call in the unit." Lt. Ed Burke said group of man from mor Planet X to the areas in fitnet of the Degree Place Richardson said there was no

protectory afternoon, but did confirm the victim had died. She didmust however of they make were a standard. The Prince Generat's County Police Concourt Analysis Unit is handling the proestigation. No one from that unit could be resident for commont. "If we have a surious addident where we suspect sumpone may die,

Friday night. "It's not handled by a ingular basi officier" Jamis King-Morris, a freehman

official police report on the accident chemistry major at Prance George's who saw the incident called \$11 Community Colleges, was diffing on the stone wall near Planet X when the intradictation occurrend.

"I will never get that sound out of my head," she said. "It counded like two cars bitting each other."

King-Morris said she heard the acreech of brakes befine the impact. She sold the driver of the vehicle them and out of the car started screating For factor and searcing his lightly, then yallod for ocenocito to call 911.

A Terrapio Station hartender

instantiniste.

George DeGenment, a Tetrapon Station boation whereas were kine the from's autilide dom when the addident inspiration, axid he were over in where: the victim lay after he was hit.

"There was blood curning not of his month, his fare ... there was blood everywhere," Deficenace said.

Another Terrogia Station employout said he heard one of the people the

Finane See ACCIDENT, Page 2

Accident: Man is killed while crossing Route 1

Continued from Page 1

Mandana

Surfragers

Base 1

Confidence interest

victim was crossing the intersection with say, "Oh my god! ... He just got hit," then the group ran away from the scene. He said the car that struck the man seemed to be traveling the same speed as the rest of traffic.

Witnesses said an ambulance and police arrived within minutes after the incident.

King-Morris and Shilo Lillis, a junior at Greenbelt's Eleanor Roosevelt High School who also saw the incident, said "There was a lot of commotion, a lot of fire

trucks."

"It looked like he [the victim] saw the car coming at the last minute, and by that time, he couldn't really do anything," said Mike Samuels, a sophomore undecided major at Montgomery College who was sitting outside the

Bagel Place when the accident happened. "It looked like his left leg was pretty much just hanging there when he was on the ground."

Police closed off the surrounding areas with flares and police tape.

INDEX

Classified

WEATHER

Today: Sunny/high 70s Tonight: Cloudy/low 60s Tomorrow: Showers/mid 70s

89TH YEAR TUESDAY, SEPTEMBER 29, 1998 NO.21

YOUR INDEPENDENT STUDENT NEWSPAPER . UNIVERSITY OF MARYLAND, COLLEGE PARK

SPORTS

The Terrapin volleyball team defeats American, 3-0, last night at Ritchie Coliseum. Page 9

Student struck on Rt. 1 not dead

Accident: A sophomore is in critical condition with head injuries.

By DAMELLE NEWMAN Distance (Inch. etc.) melling

The campus student who was hit by a car Friday night on Route 1 is not dead, contrary to information released Sunday by said Cpl. Steven Markley.

Martin Kerrigan, an 18-yearold sophomore letters and sciences major from New Jersey, was in critical condition last night at Prince George's Hospital Center, a hospital employee said over the telephone.

Markley said the man was windshield.

crossing at Route 1 and College Avenue against a green light at 10.30 p.m. A car in the left northbound lane braked to avoid hitting Kerrigan, and a silver Honda Prelude swerved to the right lane, where there Prince George's County Police, were no cars, to avoid hitting the first car.

The Honda hit Kerrigan in the right northbound lane traveling about 40 miles per hour. Kerrigan had been drinking. Markley said. Kerrigan sustained serious head injuries from the accident after colliding with the Honda's hood and

The driver of the Honda, James Bochneck, was charged with violations not related to the accident, Markley said, including driving with a stattion.

not under the influence of alcohol and has no campus affiliation. Markley did not know if

Witnesses saw Kerrigen and a group of people walking across Route 1 toward the Bagel Place Jamie King-Morris, a Prince George's County Community

College student who saw the accident, said she heard the screech of brakes before the car hit Kerrigan.

She said the driver of the pended license and registra- Honda got out of the car after he hit Kerrigan, began scream-Markley said the driver was ing and waving his hands and velled for someone to call 911. Witnesses said the ambulance urrayed within minutes and took Kerrigan to the hospital.

George DeGennaro, a Terracin Station bouncer who was working the bar's outside door when the accident happened, said he went over to where the

victim lay after he was hit.

"There was blood coming out of his mouth, his face ... there was blood everywhere." DeGennaro said.

Members of the Kappa Sigma fraternity, where Kerrigan is a boarder, said although they didn't get a chance to "really know" Marty," their prayers are with him.

"We're all extremely sad about this," said Mike Margolius, an acquaintance of Kerrigan and Koppo Sigma president. "We hope everything works out for the best."



termine within land sciences make Martin Remission was hit by a car Helay rectifit on Route 1.

FACE A shire Honda Prelotie bit Resign is the right northboard lone of Russel as he could toward for Baul Plan

RECT: Police sold alcohol was not a factor and did not charge the driver with anothing related to the auxident.

FACE for light will be official condition. last wide at the Priver George's Hughtan Castler.

Return to School

- Returned to college 4 months following TBI
- 2 months post in patient hospitalization
- Started off by taking 1 class at the local community college
- Followed that semester by taking a class over the summer
- The following fall, 11 months after injury, enrolled full time in school

- Pride/Ego played a huge role
- Difficulties with memory were a huge challenge
- Struggles were just as much, if not more, from adjusting to life with a brain injury as they were being a student with a brain injury!



Struggles

- Thinking I could do school/life the way I always had and still get the same results
- Memory
- Trying to establish a new identity
- Learning who the "new you" is
- Coming to terms with the loss of old life
- Partying like I had prior to my injury
 - Substance abuse
 - Multiple arrests, legal trouble





What happened

- Life was a mess and hit "rock bottom"
- Consequences included legal system and substance abuse rehabilitation
- Admitting when I needed help and then reaching out and getting that help
- Long term sobriety has included 12 step program



Recommendations for Professionals/Survivors (people living with brain injury as well as their family members and supporters)

- Help individuals educate others about brain injury, specifically about <u>THEIR</u> brain injury and how it affects them
- Encourage use disability support services, even if it just to know that they are there and to see what they can offer
- Likelihood of additional brain injuries rises exponentially
- Make learning/treatment as accessible as possible
- Find a brain injury support group, it is nice to know that you are not alone in this journey and that there are others facing similar things
- Know strengths! Know weaknesses! Know limits!



Accept the challenge!



Breakout Rooms- Teams develop questions to challenge each other's Brain Injury knowledge!

Each team will come up with one "closed answer question," for example: "The sky is______ when the sun is shining." (correct answer is "blue")

And one multiple choice question, for example:

"The Maryland State bird is the:

- a) Blue Bird
- b) Raven
- c) Oriole

(correct answer is "Oriole")





Teams come back from the breakout rooms and will try to stump each other with the questions they have developed.



Wrap Up

- Questions
- Comments
- Any suggestions for us regarding a topic you would like us to cover related to brain injury in upcoming sessions?



Part II: Who is Affected By Brain Injury

Next week we will look at:

What are the systems and services where people living with brain

injury are over represented? Here we will look at the implications for

individuals who are engaged in mental health and addiction treatment

programs, criminal justice and domestic violence and homeless

systems who are living with a co-occurring brain injury. The link

between suicide and brain injury will also be explored.



Thank you!!!

Anastasia Edmonston MS CRC

TBI Partner Project Coordinator

MD Behavioral Health Administration

anastasia.edmonston@maryland.gov

Martin Kerrigan

Contract employee

Maryland Behavioral Health Administration

martin.kerrigan@maryland.gov

"This project was supported, in part by grant number 90TBSG0027-01-00 from the U.S. Administration for Community Living, Department of Health and Human Services, Washington, D.C. 20201. Grantees undertaking projects with government sponsorship are encouraged to express freely their findings and conclusions. Points of view or opinions do not, therefore, necessarily represent official ACL policy."

