Invisible Disability

OVERDOSE, BRAIN INJURY, AND THE IMPACT OF COGNITIVE IMPAIRMENT ON SERVICE DELIVERY AND TREATMENT OUTCOMES

The Governor's Opioid Response Seminar Webinar Series, partnered with the New England PTTC

Friday, March 4, 2022, Carolyn Lemsky, Ph.D., C.Psych.

Opioid crisis in Maine

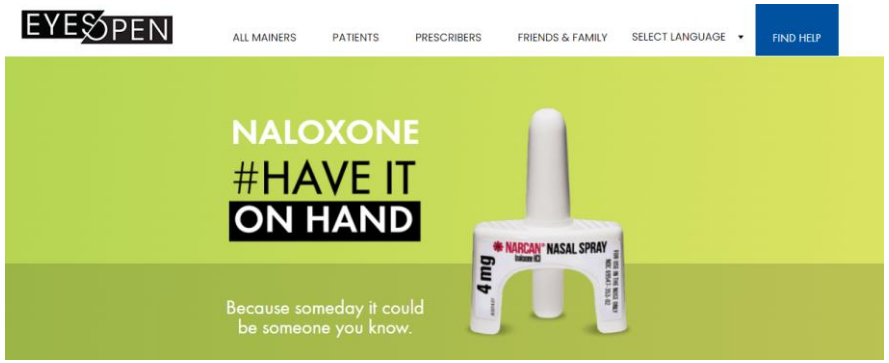

Table 1. Comprehensive totals for fatal and nonfatal overdoses, 2021

	Fatal	Nonfatal				Total overdoses
		Emergency department	EMS not transported to emergency dept.	Community reversals with naloxone	Law enforcement reversal with naloxone and without EMS—estimated	
January	55	255	163	127	3.6	549
February	42	259	117	100	3.6	480
March	57	392	169	158	3.6	723
April	45	320	187	139	3.6	650
May	48	313	157	101	3.6	623
TOTAL (%)	247 (8%)	1539 (48%)	793 (25%)	625 (19%)	18.0 (<1%)	3222 (100%)

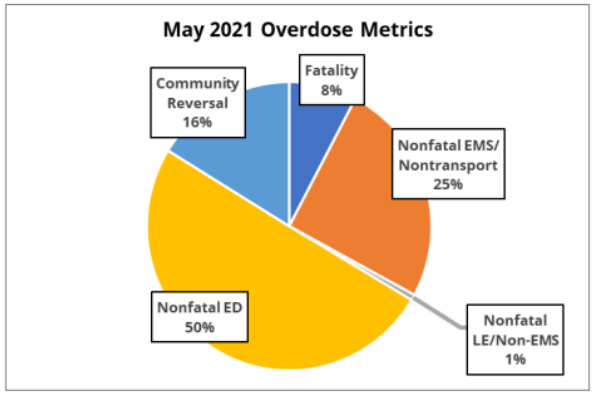

Figure 1. Fatal and nonfatal overdoses in May 2021

Lemsky, 2022

EYES OPEN

ALL MAINERS PATIENTS PRESCRIBERS FRIENDS & FAMILY SELECT LANGUAGE FIND HELP

NALOXONE #HAVE IT ON HAND

Because someday it could be someone you know.

Opioid crisis in Maine

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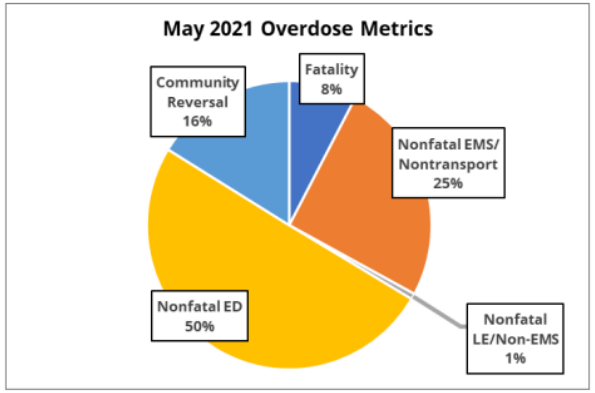


Figure 1. Fatal and nonfatal overdoses in May 2021

Opioid crisis in Maine

- 48 Fatal
- 571 Non-Fatal
  - 313 ER
  - 157 EMT
  - 101 Community Reversals

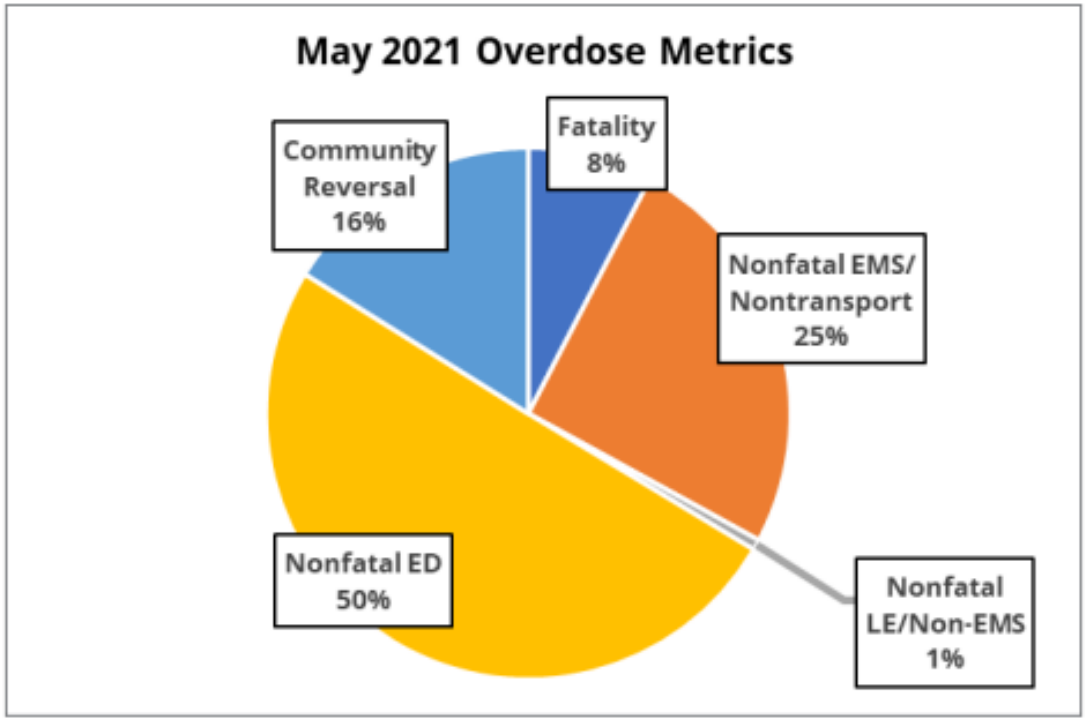


Figure 1. Fatal and nonfatal overdoses in May 2021

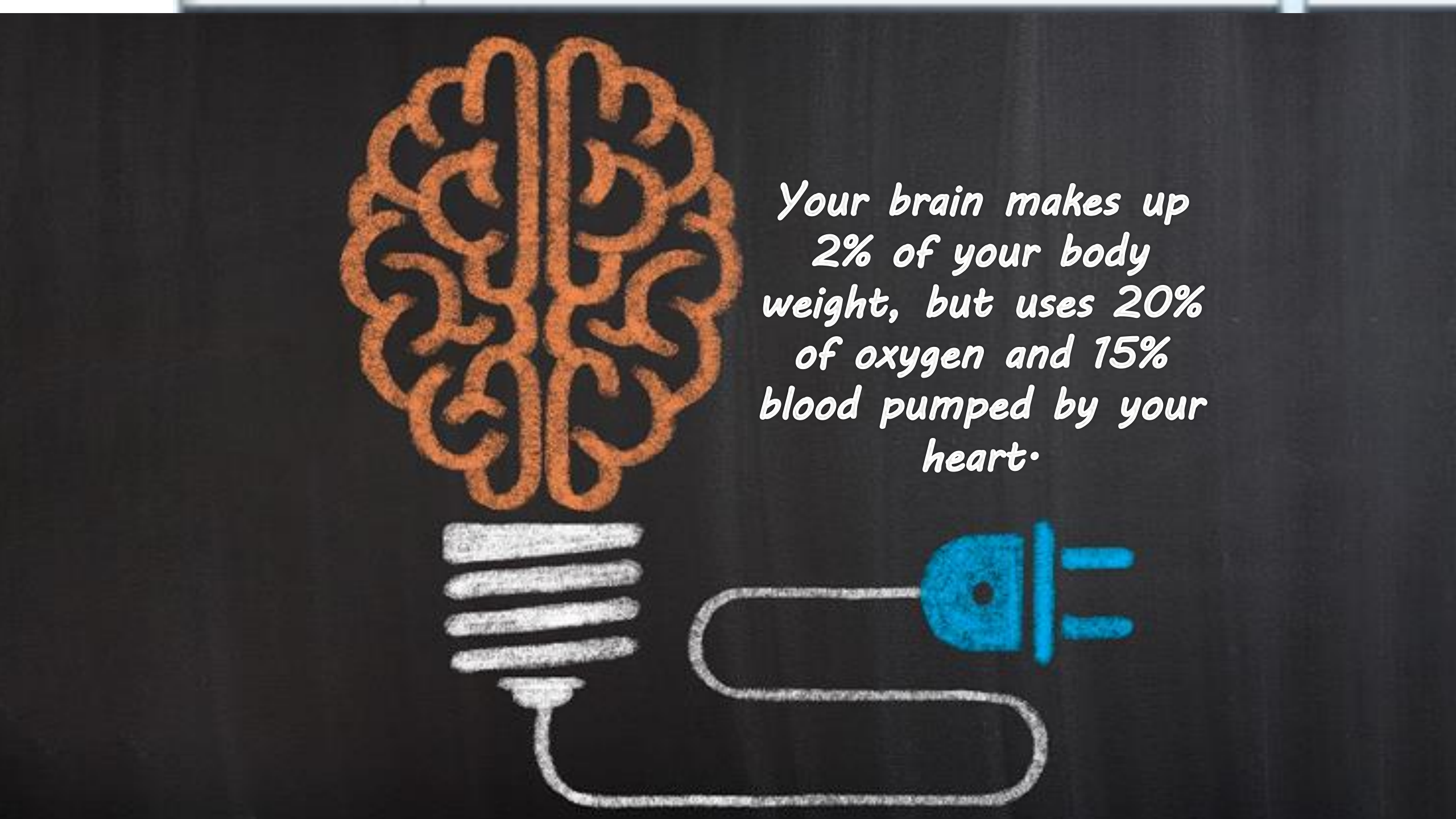
In May, 2021, for every Fatal OD, there were 13 non-fatal overdoses

Nonfatal Overdose

- As many as 20% if people who use opioids are at risk for an episode of overdose every year (College et al., 2019).
- Each nonfatal overdose may result in a new (additive) risk of neurocognitive impairment.
- History of TBI may increase risk of overdose 3 fold (Fonda et al., 2020).

Webinar Objectives

1. Increase awareness of the intersection between overdose related cognitive impairment and other acquired brain injuries and their potential impact on service delivery.
2. Provide an overview of the effects of hypoxia and anoxia associated with opioid use and overdose.
3. Provide an overview of essential skills required to address neurocognitive impairments in the people you serve.
    1. Screening for brain injury and cognitive impairment
    2. Recognizing and compensating for functional impairments
    3. Program and case management considerations
4. Introduce free and available evidence-based training resources


Your brain makes up 2% of your body weight, but uses 20% of oxygen and 15% blood pumped by your heart.

Impact of respiratory suppression

Hypoxia: Reduction in oxygen available to the brain.

- Temporary memory loss
- Reduced coordination
- Inattentiveness
- Poor judgement

Anoxia: Complete lack of oxygen to the brain.

- Coma
- Seizure
- Brain death

Hypoxia (a little demonstration)

- https://www.youtube.com/watch?v=n_Ml9UiYwJA&list=PL3J1PMySbquirMhxPZae06UmnvlnrVd10&index=4

Brain Consequences hypoxic/Anoxic injury

- Damage to vulnerable structures
  - Hippocampus
  - Basal ganglia and globous pallidus
- Changes in white matter (leukoencephalopathy).
- Seizures
- Cell Death

Cognitive and behavioral impairments

- Memory loss
- Slowing
- Reduced attention and concentration
- Impaired judgement (discounting the value of delaying gratification).
- Changes in mood and personality including Irritability, depression, or confusion
- Visual-Spatial functioning
- Planning, problem-solving and using established cognitive abilities

Sensory Motor Impairments

- Impairments of balance and coordination that may affect gross motor (walking) and fine motor (manual dexterity).
- Vision changes
- Reduced hearing
- Slower /impaired auditory processing

Many factors may contribute to cognitive impairment in people who use opioids

Drug and Alcohol Dependence 226 (2021) 108838

Contents lists available at ScienceDirect

Drug and Alcohol Dependence

journal homepage: www.elsevier.com/locate/drugalcdep

Review

Neurocognitive impairments and brain abnormalities resulting from opioid-related overdoses: A systematic review

Erin L. Winstanley [a,b,*], James J. Mahoney III [a,b], Felipe Castillo [c], Sandra D. Comer [c]

[a] Department of Behavioral Medicine and Psychiatry, School of Medicine and Rockefeller Neuroscience Institute, West Virginia University, Morgantown, WV, USA
[b] Department of Neuroscience, West Virginia University, Morgantown, WV, USA
[c] Columbia University, Department of Psychiatry and New York State Psychiatric Institute, New York, NY, USA

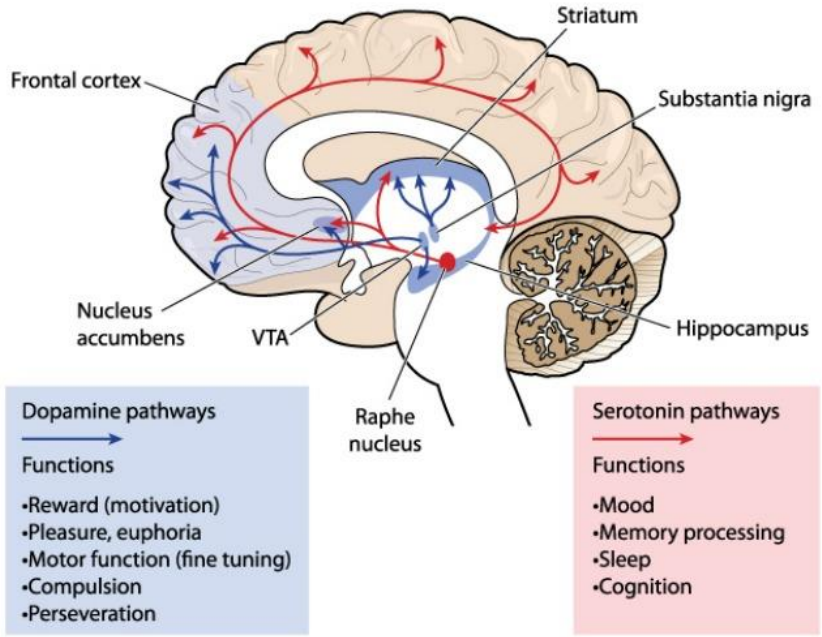
- Neurotoxic impact of opioids and other drugs on memory and executive functioning.
- Cognitive impact of chronic/infectious disease including HIV, Hepatitis.
- Risk of traumatic brain injury
- Possible additive effects of multiple overdoses

Impact of Damage to pre-frontal cortex and reward system

Effects of hypoxia and opioid use

- Opioid use limits the growth of connections in the hippocampus.
- Changes how pleasure and reward are perceived.
- Damage to frontal lobes where information about emotion is processed and planning and problem-solving take place.

Neuroanatomy of Reward



Other risks/sources of potential cognitive impairment

- Increased risk of stroke
- Increased risk of infection (HIV/Hepatitis) resulting in risk of brain abscess and meningitis
- Toxicity related to other substances used (e.g. methamphetamine)

Substance use and Traumatic Injury

- Intoxication increases the risk of having a brain injury.
- Each fall or overdose increases the likelihood of lingering cognitive impairment.
- The nature of brain injury and its outcomes increases vulnerability to substance use disorders
- Brain injury may cause or worsen mental health symptoms
- The cognitive and mental health consequences of brain injury may make it more difficult to benefit from treatment.

T

Populations most at risk for brain injury

- Substance Users
- Military
- Domestic Abuse Survivors
- Athletes (boxers, football players hockey players)
- People with a previous TBI
- Homeless or marginally housed

T

By Canadian Press

Brain injury endemic among homeless populations: Vancouver research

Feb 5, 2022 | 1:03 AM

ARTICLES | VOLUME 44, 101277, FEBRUARY 01, 2022

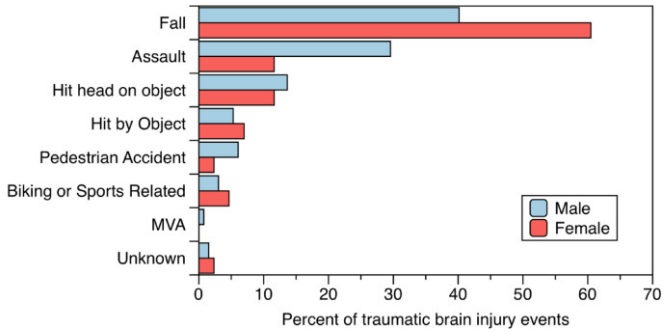
Traumatic brain injury in precariously housed persons: Incidence and risks

Tiffany A. O'Connor • William J. Panenka • Emily M. Livingston • Jacob L. Stubbs • Julia Askew • Charanveer S. Sahota • et al. Show all authors

Open Access • Published: February 01, 2022 • DOI: https://doi.org/10.1016/j.eclinm.2022.101277

Homelessness

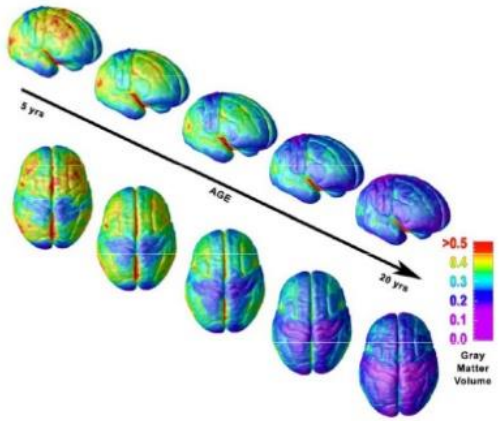
- N=326, 100 participants had a total of 175 TBIs (61% more than one TBI)
- Annualized incidence rates of 20%, as compared to 1% in the general population (Nikoo, Daderman, Krauss, Hwang & Palepu, 2017).
- Opioid dependence and previous TBI were significant risk factors.
- 9.7% events were OD related
- 60.8% intoxication
- 18.3% LOC > 30 min.



Childhood Brain Injury

- Early insults alter the future development of the brain.
- Apparently mild injuries may have long-term impacts
- Longitudinal data point to elevated risks of
  - Mental health disorders
  - Substance use disorders
  - Legal Involvement
  - Reduced Educational Attainment
  - Homelessness

Proliferation: Grey Matter



Lenroot & Giedd (2006)

Grey matter develops quickly during childhood, but slows during adolescence.

↓

Grey matter volume peaks at age 11 in **girls** and at age 13 in **boys**.

↓

Then, the volume of grey matter begins to decline.

History of brain injury is a marker for symptom complexity

- up to 75% of people attending programs for concurrent disorders have a history of brain injury with loss of consciousness (Hugo et al, 2017).
- History of brain injury is associated with more and more severe psychiatric symptoms.
- History of brain injury increases the risk of suicide three-fold.
- Strongly associated with other social determinants of health including housing, poverty, social isolation

A history of TBI with LOC is common among the clients you serve

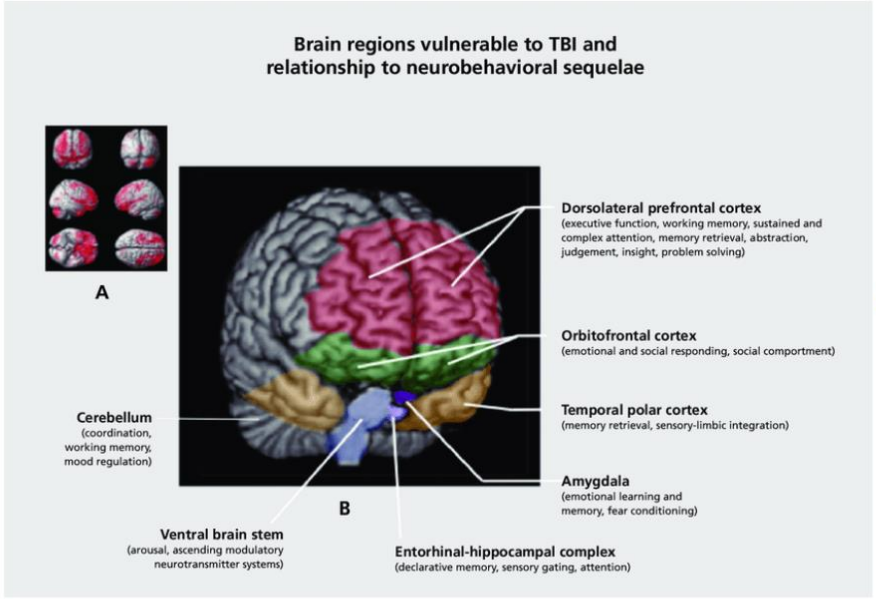
Non-institutionalized adults
1 in 5

People seeking treatment for SUD
2 - 3 in 5

Psychiatric Inpatients
2 - 3 in 5

Co-occurring Disorders
3-4 in 5

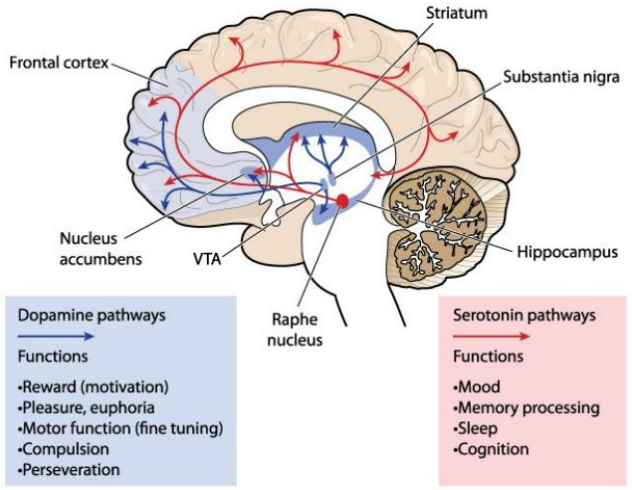
Pattern of Injury



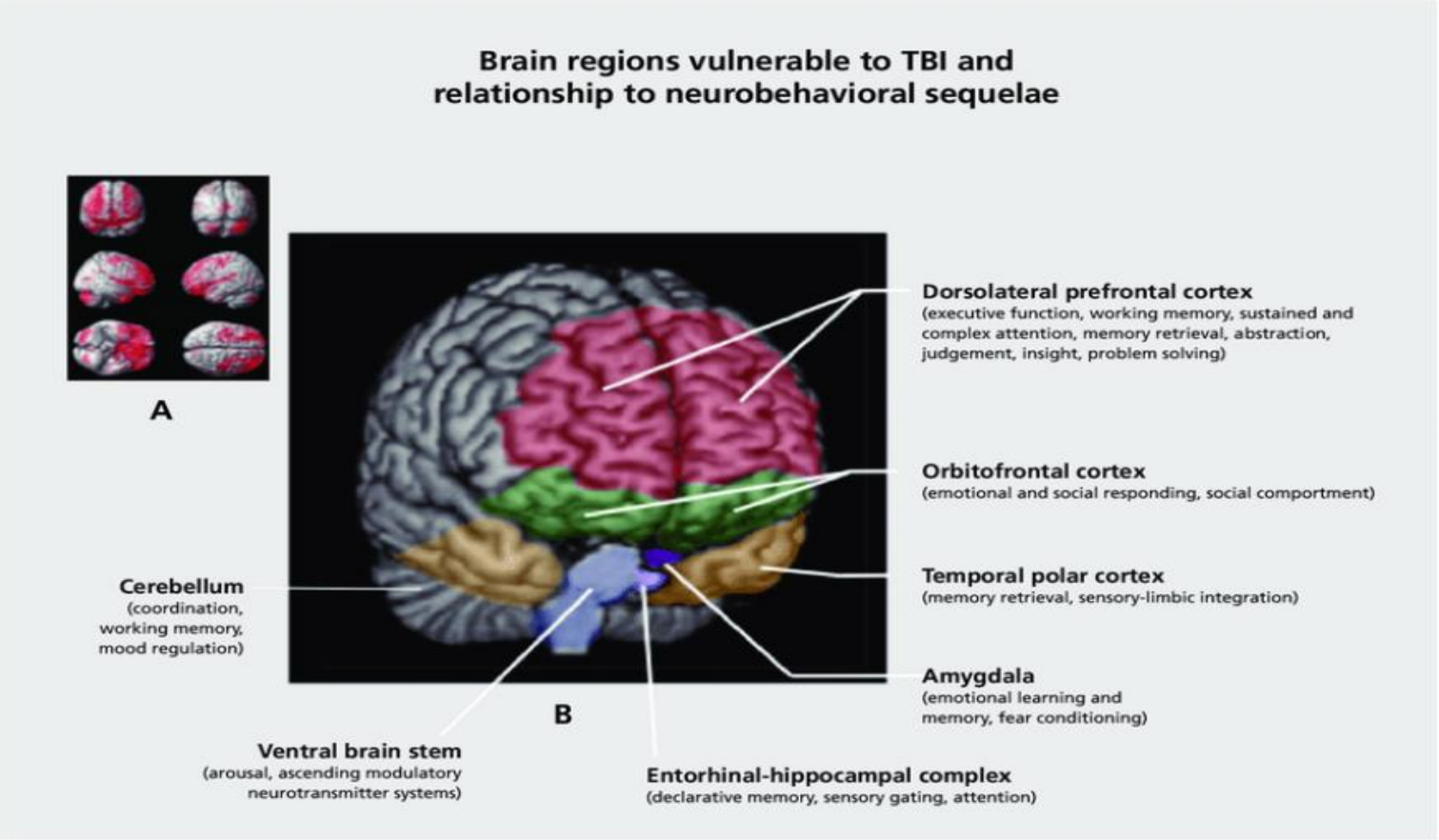
(A) Brain regions vulnerable to damage in a typical traumatic brain injury (TBI); (B) Relationship of vulnerable brain regions to common neurobehavioral sequelae associated with TBI. (A) Adapted from ref 112: Bigler E. Structural imaging In: Silver J, McAllister T, Yudofsky S, eds. Textbook of Traumatic Brain Injury. Washington DC: American Psychiatric Press; 2005:87. Copyright © American Psychiatric Press, 2005. (B) Adapted from ref 111: Arciniegas DB, Beresford TP. Neuropsychiatry: an Introductory Approach. Cambridge, UK: Cambridge University Press; 2001:58. Copyright © Cambridge University Press, 2001

The Finger print of TBI

Neuroanatomy of Reward



Pattern



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What will help?

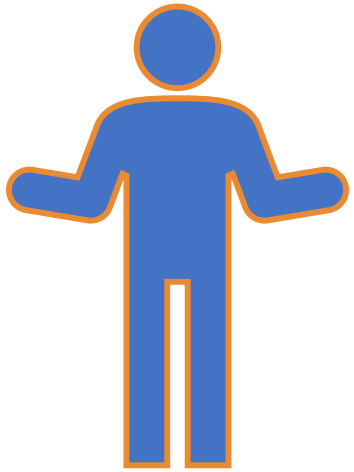
- Screening for TBI history (including OD)
- Functional Assessment (Cognitive and ADL)
- Accommodations
- Intervention/Referral

Recommendations for service providers

- Routine Screening for brain injury and other sources of neurocognitive impairment
- Learning to recognize when behaviors are the result of neurological challenges
- Making programs more accommodating
- Viewing complexity as a rule and develop programming accordingly
- Care plans that include long-term supports

What does neurocognitive impairment looks like?

- Missed appointments
- Apathetic
- Lack of empathy (demanding or rude)
- Poor insight
- Difficulty Managing Emotions
- Gap between ‘say and do’.
  - Reluctance to plan “awareness”
  - Poor follow through
  - Impulsivity



Brief Screening Questions – Brain Injury

OSU TBI-ID Quick Screen

Please think about injuries you have had during your entire lifetime, especially those that affected your head or neck. It might help to remember times you went to the hospital or emergency room. Think about injuries you may have received from a car or motorcycle wreck, bicycle crash, being hit by something, falling, being hit by someone, playing sports, or during military service.

a. Thinking about any injuries you have had in your lifetime, were you ever knocked out, or did you lose consciousness?
____ Yes
____ No (IF NO, STOP HERE)

b. What was the longest time you were knocked out or unconscious? (Choose just one; if you are not sure, please make your best guess.)
____ knocked out or lost consciousness for *less than 30 min*
____ knocked out or lost consciousness *between 30 min and 24 hours*
____ knocked out or lost consciousness for *24 hours or longer*

c. How old were you the first time you were knocked out or lost consciousness?
years old

Name: _____ Current Age: _____ Interviewer Initials: _____ Date: _____

Ohio State University TBI Identification Method — Interview Form

Step 1

Ask questions 1-5 below. Record the cause of each reported injury and any details provided spontaneously in the chart at the bottom of this page. You do not need to ask further about loss of consciousness or other injury details during this step.

I am going to ask you about injuries to your head or neck that you may have had anytime in your life.

1. In your lifetime, have you ever been hospitalized or treated in an emergency room following an injury to your head or neck? Think about any childhood injuries you remember or were told about.
   ☐ No ☐ Yes—Record cause in chart
2. In your lifetime, have you ever injured your head or neck in a car accident or from crashing some other moving vehicle like a bicycle, motorcycle or ATV?
   ☐ No ☐ Yes—Record cause in chart
3. In your lifetime, have you ever injured your head or neck in a fall or from being hit by something (for example, falling from a bike or horse, rollerblading, falling on ice, being hit by a rock)? Have you ever injured your head or neck playing sports or on the playground?
   ☐ No ☐ Yes—Record cause in chart
4. In your lifetime, have you ever injured your head or neck in a fight, from being hit by someone, or from being shaken violently? Have you ever been shot in the head?
   ☐ No ☐ Yes—Record cause in chart
5. In your lifetime, have you ever been nearby when an explosion or a blast occurred? If you served in the military, think about any combat- or training-related incidents.
   ☐ No ☐ Yes—Record cause in chart

Interviewer instruction:
If the answers to any of the above questions are "yes," go to Step 2. If the answers to all of the above questions are "no," then proceed to Step 3.

Step 2

Interviewer instruction: If the answer is "yes" to any of the questions in Step 1 ask the following additional questions about each reported injury and add details to the chart below.

Were you knocked out or did you lose consciousness (LOC)?

If yes, how long?

If no, were you dazed or did you have a gap in your memory from the injury?

How old were you?

Step 3

Interviewer instruction: Ask the following questions to help identify a history that may include multiple mild TBIs and complete the chart below.

Have you ever had a period of time in which you experienced multiple, repeated impacts to your head (e.g. history of abuse, contact sports, military duty)?

If yes, what was the typical or usual effect—were you knocked out (Loss of Consciousness - LOC)?

If no, were you dazed or did you have a gap in your memory from the injury?

What was the most severe effect from one of the times you had an impact to the head?

How old were you when these repeated injuries began? Ended?

Step 1 / Step 2

Step 1	Step 2						
	Loss of consciousness (LOC)/knocked out				Dazed/Mem Gap		Age
Cause	No LOC	< 30 min	30 min-24 hrs	> 24 hrs	Yes	No	

If more injuries with LOC: How many?_____ Longest knocked out?_____ How many ≥ 30 mins.?_____ Youngest age? _____

Step 3

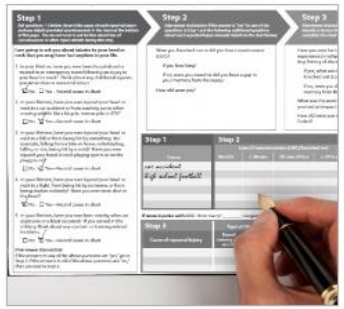
Step 3	Typical Effect		Most Severe Effect				Age	
Cause of repeated injury	Dazed/ memory gap, no LOC	LOC	Dazed/ memory gap, no LOC	LOC < 30 min	LOC 30 min - 24 hrs.	LOC > 24 hrs.	Began	Ended

Adapted with permission from the Ohio State University TBI Identification Method (Corrigan, J.D., Bogner, J.A. (2007). Initial reliability and validity of the OSU TBI Identification Method. J Head Trauma Rehabil, 22(6):318-329.

Ohio State University TBI Identification Method

Comments [4]

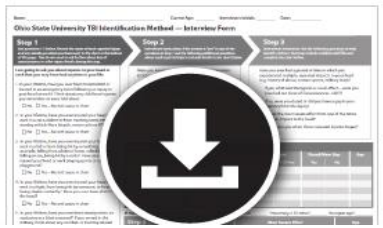
The Ohio Valley Center for Brain Injury Prevention and Rehabilitation, in collaboration with BrainLine



Knowing a history of traumatic brain injury can help all health care and social service professionals provide effective treatment to their patients and clients. Drs. John Corrigan and Jennifer Bogner developed The Ohio State University Traumatic Brain Injury Identification Method (OSU TBI-ID) — a standardized, short, structured interview designed to elicit a rich lifetime TBI history. This online training helps professionals learn how to effectively utilize the OSU TBI-ID and includes video examples of interviews and a ready-to-print interview form.

We encourage users to print out a copy of the OSU TBI-ID interview form prior to beginning the online training.

Download the OSU TBI-ID Form >



Launch the OSU TBI-ID Presentation >

Related Content

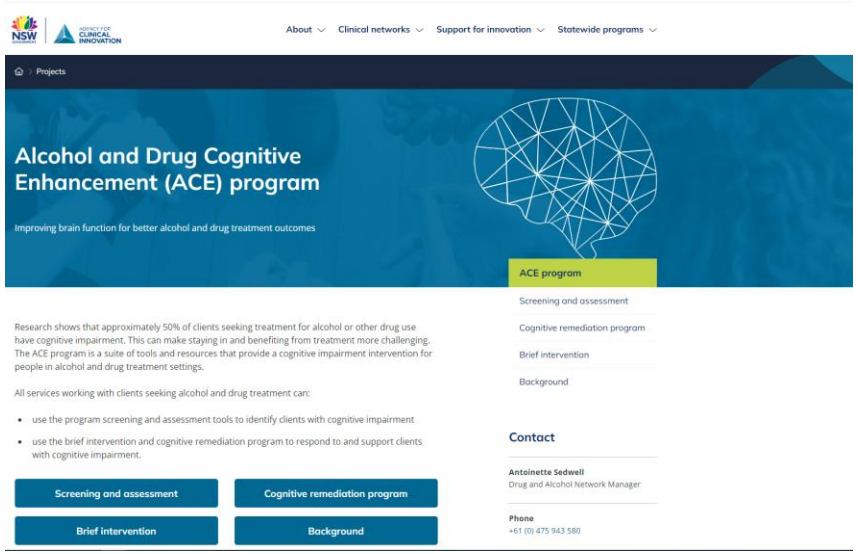
- Top Four Concussion Screener Apps for Athletes
- Brain Injury Resource Directory
- Treating Clients with Traumatic Brain Injury
- Interventions For Behavioral Problems After Brain Injury
- Substance Abuse/Brain Injury Client Workbook
- 45 Life-Changing iPhone and iPad Apps for People with Brain Injury

See All TBI Topics

Cognitive Impairment in Addictions Services

- 20 to 70% screen positive for cognitive impairment
  - Higher in programs serving more complex clients
  - 20-50% in programs serving people with alcohol use disorders

https://aci.health.nsw.gov.au/projects/ace-program



- Screening
- Intervention
- Online training modules for facilitators
- Free materials

BMC Psychiatry

BMC Psychiatry. 2019; 19: 70.
Published online 2019 Feb 13. doi: 10.1186/s12888-019-2044-4
PMCID: PMC6372999
PMID: 30760250

A stepped wedge cluster randomised trial of a cognitive remediation intervention in alcohol and other drug (AOD) residential treatment services

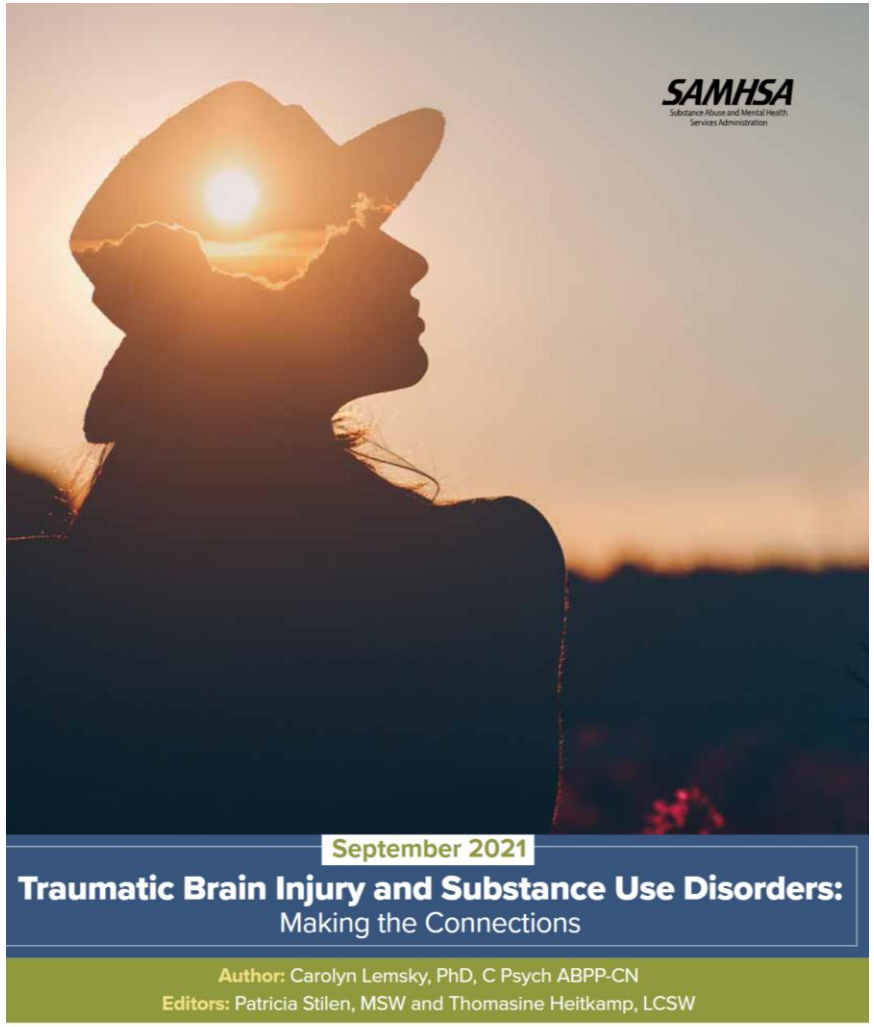
Jamie Berry,[1,2] Isabella Jacomb,[1] Jo Lunn,[3] Antoinette Sedwell,[4] Anthony Shakeshaft,[5] Peter J Kelly,[6] Pooria Sarrami,[4,7] Megan James,[4] Skye Russell,[4] Talia Nardo,[1] Daniel Barker,[8] and Jennifer Holmes[9]

BMC Psychiatry

Multi-Site Trial

Increased completion rates (from 34% to 63%)

Reduction in rates of cognitive impairment, (from 53% to 27%)



https://attcnetwork.org/centers/mid-america-attc/traumatic-brain-injury-sud-series

- Brain Basics
- Brain injury and outcomes
- Screening for Brain Injury
- Screening for Functional Impairments
- Recognizing and Accommodating Cognitive Impairments
- Recommendations for Service Delivery.
- Resources

Patterns of Injury

The Fingerprint of TBIs

The pattern of TBIs is not random. Because of the anatomy of the skull and how most traumatic injuries occur, TBIs tend to have the greatest impact on the structures of the prefrontal cortex and the temporal lobes. The inside of the skull has bony structures designed to hold the brain in place. When the force is great enough, rubbing up against these structures can cause damage to the surface of the brain and can also result in axonal shearing. For these reasons, TBIs will tend to have a pattern of disconnection that has its greatest effect on the connections from the prefrontal cortex (executive functioning) and the limbic system (emotional centers) that make up the reward circuit. These are the brain structures that are responsible for focusing attention and regulating emotion and behavior; they mediate how a person responds to reward. When connections between these areas are working well, judgments about risks and rewards are experienced as a gut feeling about the right thing to do. Focusing on a conversation in a noisy room, reading others' non-verbal behavior, keeping a lid on strong emotion, or remembering the good feelings that come with a success are automatic when connections in the brain are working. When these connections are disrupted as the result of TBI, these essential functions require conscious effort and become inefficient.

The reward circuit relies heavily on dopamine as a neurotransmitter. It is the reward where most substances of abuse exert their effects. As discussed below, the ongoing use of some substances of abuse alters the functioning of the reward system, making people more sensitive to immediate reward and less sensitive to punishing events. This same pattern is often observed after a TBI and results in behavioral impulsivity.

Brain Injuries and Overdose

An overdose can cause a brain injury, and having one overdose puts a person at risk for more.[23] People who are living with cognitive impairment are more prone to overdoses. They may have more difficulty monitoring their intake of a drug. It is also possible that changes in brain function may cause some drugs to have a more powerful effect.[57]

In overdose, the leading cause of damage to the brain is loss of oxygen. When loss of oxygen occurs for longer than 5 to 6 minutes, changes in brain chemistry occur that result in the destruction of neurons. Because the structures responsible for memory (the hippocampus) and movement (the cerebellum) use a lot of oxygen, these structures are among the first to show damage. The longer the loss of consciousness, the more tissue may be damaged or destroyed. Frequent overdoses with limited time for the brain to recover may result in increased damage. The symptoms of anoxic brain injury commonly impact executive functioning, memory, and attention, as well as movement.

Toxic Effects of Substance Use

The impact of substance use depends on the substance used and the amount and duration of use. The age when substance use started is also an important factor. Starting substance use while the brain is developing can have long-term consequences. Although the findings from the research are complex and sometimes contradictory, the most common problems associated with substances of all kinds are difficulty, including problems with memory, attention, and executive functioning, including problem-solving, goal setting, and planning.

The table below provides a broad summary of the effects of common substances of abuse. Although more research is needed, it appears that the toxic effects of alcohol and other drugs are more dramatic in people who have had a history of brain injury.

SUBSTANCE	NEUROLOGICAL EFFECTS	COGNITIVE EFFECTS
ALCOHOL[12, 48]	• Associated with brain atrophy, particularly the Hippocampus (memory system). • Thiamine deficiency may cause a severe short-lived condition (Wernicke's encephalopathy) or result in lasting learning and memory problems (Korsakoff's syndrome).	Memory Executive Functioning: • Visual-Spatial abilities.
CANNABIS[50]	• Some evidence for atrophy in the Hippocampus (memory system) and changes in connectivity between the frontal lobes and limbic system. • May have a greater impact on the developing brain.	Memory Executive Functioning.
METHAMPHETAMINE[51, 52]	• Widespread damage to dopamine receptors, with cell loss in the emotion and reward system (limbic system), and Hippocampus (memory system).[56]	Memory Executive Functioning: • Inability to suppress habitual behaviors. • Sensitivity to short-term reward. • Insensitivity to punishment. • Insensitivity to normal pleasures.
COCAINE[53, 55]	• Weakened connections between the frontal lobe and limbic system (frontostriatal) connections, brain atrophy, and changes in limbic (emotional) and Hippocampus (memory system).	Memory Executive Functioning: • Sensitivity to short-term rewards. • Insensitivity to normal pleasures. • Increased sensitivity to pain.
OPIOIDS[56]	• Weakened connections between the frontal lobe and limbic system (frontostriatal) connections, brain atrophy, and changes in limbic (emotional) and Hippocampus (memory system).	Memory Executive Functioning: • Sensitivity to short-term rewards. • Insensitivity to normal pleasures. • Increased sensitivity to pain.

Other sources of cognitive difficulties

History of Substance Use

Overdose

Screening

- When
- Stigma
- Trauma-informed Care
- Methods
- Interpretation

When Should Screening Occur?

The timing of screening for brain injury will depend on the setting you work in and the clients you serve. Questions pertaining to a history of illness or injury affecting the head or brain can be included in intake questionnaires. The best practice is to follow-up with an interview to ensure that the client has understood, remembered, and reported all the important events and information. There are also some important considerations to minimize the possible negative impact of screening.

Managing Stigma. While it is very important to screen for brain injury, it is also important to be sensitive to the potential for clients to feel stigmatized by the discussion. It is common for people who have a history of brain injury to feel that others see them as "dumb" or "damaged." It is important to consider how you, as a clinician, must elicit the history in a respectful manner. **The importance of recognizing and affirming a clients' individual's resilience, abilities, and strengths throughout this discussion is critical.** It is also important to recognize and reinforce that having a problem with memory, attention, cognitive slowing, or communication does not mean that a person is unable to make decisions for themselves or make important contributions to others. What it does mean, though, is that understanding these difficulties and compensating for them will allow a person to have more impact. They will, then, be able to make the best possible decisions for themselves and be better understood and more in control.

Trauma-Informed Care. For many people, talking about their medical history and, in particular, any injuries to their head or brain may elicit traumatic memories. Before asking direct questions about brain injury, screening for a history of trauma will help avoid unexpected and negative reactions to the assessment. Even with screening, however, a client may have an emotional reaction to being asked about their history of injury. This is particularly true if their injury occurred under traumatic circumstances. The clinician will need to use their judgment regarding the timing of a screening interview and how far to pursue specific information if a client appears distressed.

Clients who may have sustained an injury in the context of intimate partner violence or other trauma may feel more comfortable and, therefore, provide more complete reports on questionnaires that they can complete privately rather than in interviews.[24] Screening tools may need to be modified slightly to include questions related to near strangulation. If you are working in an addiction setting, you may want to ask about overdose episodes explicitly.

Screening Methods

Screening measures that use only one or two questions to determine whether a brain injury has occurred have been found to miss milder and more remote histories of brain injury.[25] For this reason, researchers have developed screening measures that provide the individual with a clear set of cues to help them think back on their own history and provide responses that indicate when the injury happened and how severe it was. Although self-reporting is not perfect, it can provide a reasonable estimate of an individual's exposure to brain injury over the course of their lifetime. An experienced interviewer may be able to complete this screening in as little as just a few minutes for an uncomplicated history, or up to 15 minutes if there is a substantial brain injury history.

Problems with Processing Information

Processing information relies on good connections among brain structures. After brain injury, pathways between the brain's processing centers may be damaged, making the process of thinking much slower. This doesn't mean that a person is unable to understand something, but it may take them longer.

When a person is slow in processing information, you may notice:

- Getting a part (but not all) of what is being said.
- Taking a long time to answer questions.
- Appearing lazy.
- Showing signs of fatigue (zoning out, looking sleepy).

What you can do to help:

- Keep things simple. Present one idea at a time.
- Check in—have the person repeat what they understood to make sure you are on the same page.
- Slow down your speech, and make sure you give a client enough time to respond to questions.

PROBLEM	EXAMPLES	WHAT TO DO
Getting part of a message	Alex seems confused after discussions and sometimes doesn't remember all that we talked about.	Present one concept at a time to Alex. Wait for recognition before moving on. Write important concepts down on paper that are visible to Alex.
Delayed responding	Jon may continue to talk about something after the topic has changed.	Be sure to give Jon plenty of time to respond to questions. Be aware that he has likely missed the change in topic, and re-introduce the information.
	Sanjita just seems to be very quiet. Sometimes she doesn't answer at all.	Provide Sanjita with a cue, and give more time to respond. "Sanjita, we were talking about triggers. Did you have anything to add?"

Self Awareness

- Self-Awareness Defined
- Assessment of Self-Awareness
- Impact on Programming

Difficulties with Self-Awareness

Self-awareness is probably the most complex of human abilities. It gives us an accurate picture of our strengths and weaknesses. Good self-awareness depends upon many cognitive functions working together, as well as psychological factors, such as a person's willingness to accept and acknowledge their strengths and weaknesses. Unlike other cognitive difficulties that may be directly observed, self-awareness can be more difficult to assess. However, understanding how aware an individual is of their impairments can be very important in determining the course of intervention.

Developing self-awareness related to newly acquired problems is often difficult after a brain injury. To develop self-awareness, an individual needs to notice the relationship between a behavior and its consequences. That may seem straightforward, but when clients have problems with attention, memory, reading, understanding their own emotions, and with problem-solving and reasoning, it's not surprising that they have difficulty recognizing when something that they are doing is contributing to the problems they are experiencing. It is also important to consider that most injuries occur suddenly, as the result of trauma or illness, and that the results of the injury may require a person to radically alter their expectations of themselves.

Addressing the Gap between "Say" and "Do" with Environmental Supports

As a general rule, the more limited or inconsistent an individual's level of awareness, the more likely they are to require environmental supports to accomplish their goals. Often, the difficulty the client is having in following through with therapy-related tasks is that they are distracted by their current environment and begin to neglect the goal that they had sincerely expressed in a therapy session. Failing to meet a goal may cause a client to avoid treatment settings. Difficulty with follow-through will often result in clients being labeled "unmotivated" or "uncooperative." The provision of environmental supports helps clients to stay in treatment and achieve treatment goals.

AWARENESS	STAGE OF CHANGE	COMMON TASKS IN AN INTERVENTION
Little or no self-awareness	Pre-Contemplative. May not have identified the negative consequences of substance use. Not yet expressing a desire for change. May avoid discussion about substance use.	Emphasis is on environmental supports, working directly with a client to achieve goals. Establish rapport, and reduce barriers to attending intervention. Support participation in non-use-related activities. With permission, provide factual information about the impact of substance use. Support the client in developing and talking about their current goals and priorities. Support client to determine how substance use may interfere with stated goals/priorities. Harm-reduction strategies.
Intellectual	Contemplative. Expressing ambivalence about changing substance use.	Environmental supports remain primary. Support the development of awareness by predicting and tracking outcomes and supportive/non-judgmental feedback. Support client to weigh the risks and benefits of substance use.
Emergent	Preparation. Maybe taking small steps (e.g., seeking information)	Continued environmental supports with collaborative problem-solving and planning.
Anticipatory	Action.	Increased emphasis on self-management. Client may be taking on more responsibility for maintaining environmental supports or taking independent action.

Clients are likely to need some support to...

Understand the impact of brain injury and substance use

Remember what to do and when

Make decisions and set clear goals

Make plans and problem-solve

Get started starting

Keep track of goals and evaluate progress

Key Considerations in Program Development:

Longer-term interventions and smaller caseloads may be required to adequately address clients' needs. Clients with brain injury present with greater symptom complexity and are likely to require longer periods of intervention along with more integrated aftercare supports.

Coordination with community partners will be needed. This will likely require actively reaching out to, and creating partnerships with, brain injury providers and other support agencies in the community.

Providers should recognize the elevated risks for impulsive behavior, including suicide, and regularly assess suicide risk.

Providers should be aware of these elevated risks of pain, seizure, endocrine, and neurogenerative disorders and make referrals for assessment as required.

Recommendations for Service Delivery

- Outreach groups
- Intake
- Community Linkages
- Motivational Interviewing
- Community Reinforcement and Family Approach (CRAFT)
- Specialized Referrals

Adaptation for Outreach Services

Many people living with cognitive impairment have difficulty identifying and seeking out services that would be beneficial. Resources across service sectors will help clients to find and benefit from your services. In addition, having links with providers in other sectors can serve as a source of consultation and referral. Joint training opportunities with providers of ABI services is one way to make connections and ensure that you are aware of services in your area. For example, offering to swap training or provide training on topics such as the identification of substance use disorders and available treatment opportunities with a provider of ABI services, who can provide similar information related to brain injury, will provide an excellent resource for staff members and begin the process of building referral relationships.

Many clients with brain injury will require a more assertive approach to care, which may include meeting clients in the community. They are also more likely to require case management services that include supporting a client to follow through with a referral.

Adaptation for Intake Services

In the section on assessment, you learned about ways to screen for brain injury as well as the resulting impairments. Often clients with cognitive impairments will have greater difficulty attending appointments on time, waiting for appointments, or following through with multi-stepped referral processes. To avoid barriers to care,

Pulling It All Together (worked example)

Using a table like the one below will help you to organize your interventions for treatment planning purposes. Consider how your clients' difficulties might impact their ability to participate in treatment and address treatment goals.

	ALERTNESS/ FATIGUE	ATTENTION	PROCESSING	MEMORY	EXECUTIVE COMMUNICATION BEHAVIOR
Observations	Sleepy in appointments after 2 p.m. Often arrives hungry.	Changes topic, distracted by noise.	Gets only part of the message.	Needs reminders for appt. and tasks.	Dominates in groups. Often makes off-color jokes.

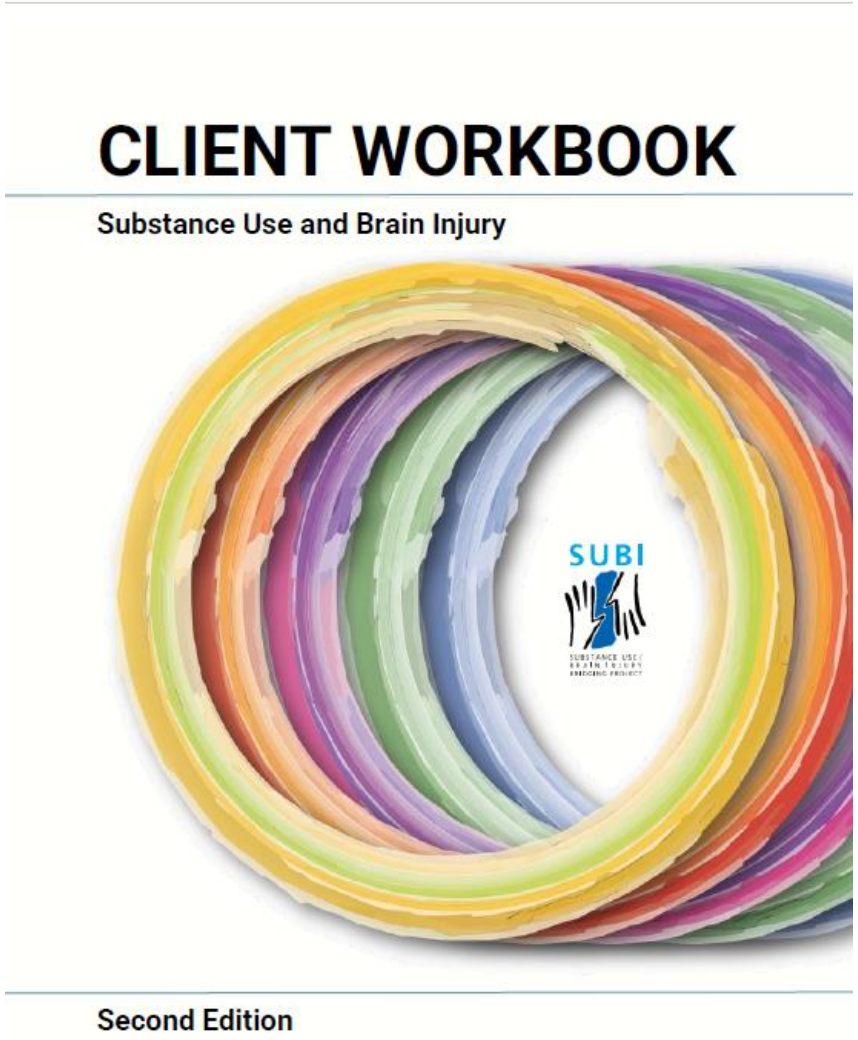
GOAL AREA	SUPPORTIVE STRATEGIES
Attendance and participation	Review how to make reminders in phone (set alarm for one hour before appointments). Schedule for morning appointments.
Attention and comprehension	Use notes in session as cue for topic. Take picture for reminder. Slow down/ break down messages.
Learning and remembering new information	Picture of session notes. Review previous session at start of session. Organize information into top two or three things to remember. Repeat key messages.
Following through with tasks	Make specific plans, and help to create reminders in phone or as notes/ posters at home. Break tasks down into small elements. Encourage client to enlist help of family to support follow-up.
Understanding strengths and needs	Use goal setting. Ask client to predict behavior/track progress. Review events, and modify approach as needed.
Setting realistic goals	Encourage client to dream big and start small with a goal that can be done in the next week. Build on most recent success.

Care planning

- Encouraging specific goals related to managing ABI symptoms.

Introducing SUBI workbook 2.0

- MI adapted approach
  - Inclusive language
  - Readings to be completed with a client to encourage discussion
  - Exercises to encourage self-reflection
- Is my Substance use Something to Worry About?
- Tackling My Substance Use
- Coping strategies for Life
- Skills for Maintaining Health and Relationships
- Pulling it All Together



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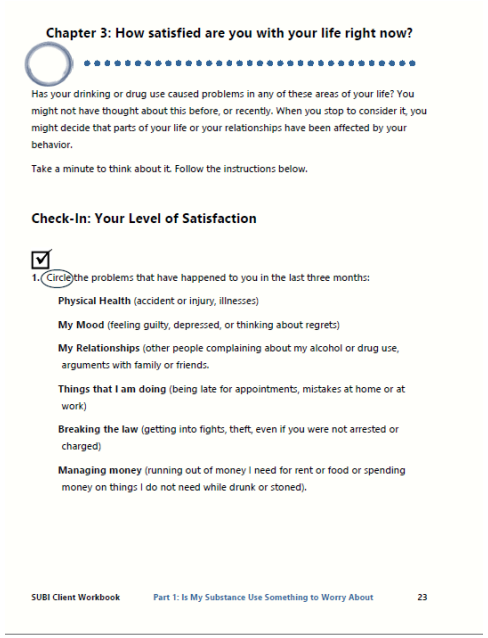
- MI adapted approach
- Inclusive Language
- Brief readings to encourage discussion and reflection



Chapter 3: How satisfied are you with your life right now?

Has your drinking or drug use caused problems in any of these areas of your life? You might not have thought about this before, or recently. When you stop to consider it, you might decide that parts of your life or your relationships have been affected by your behavior.

Take a minute to think about it. Follow the instructions below.

Check-In: Your Level of Satisfaction

1. Circle the problems that have happened to you in the last three months:

Physical Health (accident or injury, illnesses)

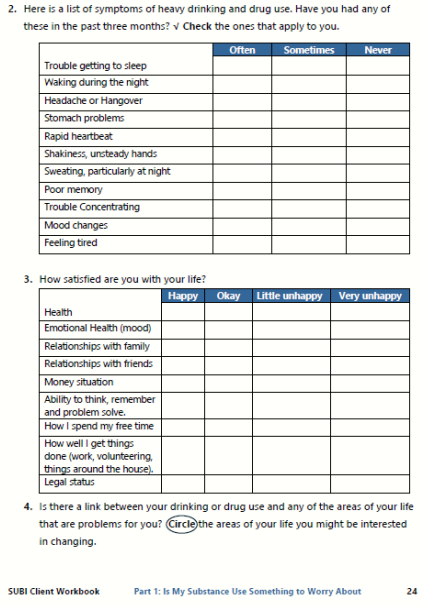
My Mood (feeling guilty, depressed, or thinking about regrets)

My Relationships (other people complaining about my alcohol or drug use, arguments with family or friends.

Things that I am doing (being late for appointments, mistakes at home or at work)

Breaking the law (getting into fights, theft, even if you were not arrested or charged)

Managing money (running out of money I need for rent or food or spending money on things I do not need while drunk or stoned).



2. Here is a list of symptoms of heavy drinking and drug use. Have you had any of these in the past three months? √ **Check** the ones that apply to you.

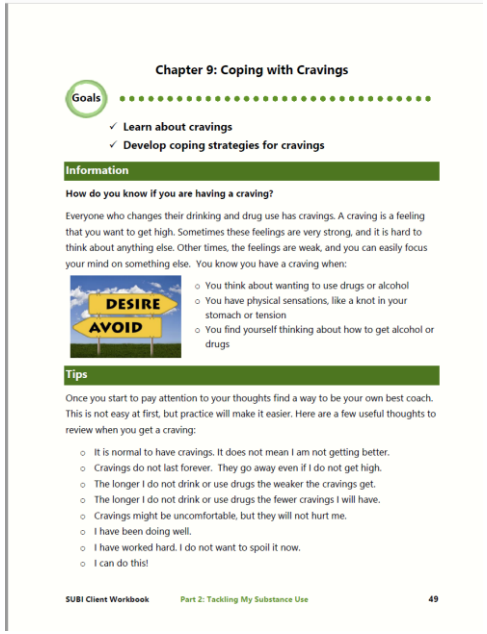
	Often	Sometimes	Never
Trouble getting to sleep			
Waking during the night			
Headache or Hangover			
Stomach problems			
Rapid heartbeat			
Shakiness, unsteady hands			
Sweating, particularly at night			
Poor memory			
Trouble Concentrating			
Mood changes			
Feeling tired			

3. How satisfied are you with your life?

	Happy	Okay	Little unhappy	Very unhappy
Health				
Emotional Health (mood)				
Relationships with family				
Relationships with friends				
Money situation				
Ability to think, remember and problem solve.				
How I spend my free time				
How well I get things done (work, volunteering, things around the house).				
Legal status				

4. Is there a link between your drinking or drug use and any of the areas of your life that are problems for you? Circle the areas of your life you might be interested in changing.

- MI adapted approach
  - Goals
  - Information
  - Tips
  - Check-in
  - Plan



Chapter 9: Coping with Cravings

Goals

- ✓ **Learn about cravings**
- ✓ **Develop coping strategies for cravings**

Information

How do you know if you are having a craving?

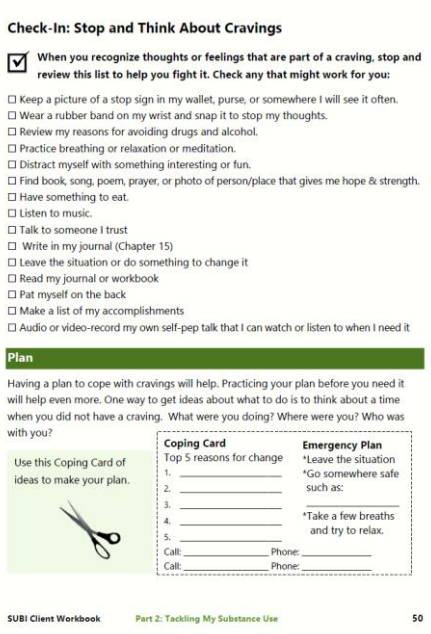
Everyone who changes their drinking and drug use has cravings. A craving is a feeling that you want to get high. Sometimes these feelings are very strong, and it is hard to think about anything else. Other times, the feelings are weak, and you can easily focus your mind on something else. You know you have a craving when:

- You think about wanting to use drugs or alcohol
- You have physical sensations, like a knot in your stomach or tension
- You find yourself thinking about how to get alcohol or drugs

Tips

Once you start to pay attention to your thoughts find a way to be your own best coach. This is not easy at first, but practice will make it easier. Here are a few useful thoughts to review when you get a craving:

- It is normal to have cravings. It does not mean I am not getting better.
- Cravings do not last forever. They go away even if I do not get high.
- The longer I do not drink or use drugs the weaker the cravings get.
- The longer I do not drink or use drugs the fewer cravings I will have.
- Cravings might be uncomfortable, but they will not hurt me.
- I have been doing well.
- I have worked hard. I do not want to spoil it now.
- I can do this!



Check-In: Stop and Think About Cravings

☑ **When you recognize thoughts or feelings that are part of a craving, stop and review this list to help you fight it. Check any that might work for you:**

- ☐ Keep a picture of a stop sign in my wallet, purse, or somewhere I will see it often.
- ☐ Wear a rubber band on my wrist and snap it to stop my thoughts.
- ☐ Review my reasons for avoiding drugs and alcohol.
- ☐ Practice breathing or relaxation or meditation.
- ☐ Distract myself with something interesting or fun.
- ☐ Find book, song, poem, prayer, or photo of person/place that gives me hope & strength.
- ☐ Have something to eat.
- ☐ Listen to music.
- ☐ Talk to someone I trust
- ☐ Write in my journal (Chapter 15)
- ☐ Leave the situation or do something to change it
- ☐ Read my journal or workbook
- ☐ Pat myself on the back
- ☐ Make a list of my accomplishments
- ☐ Audio or video-record my own self-pep talk that I can watch or listen to when I need it

Plan

Having a plan to cope with cravings will help. Practicing your plan before you need it will help even more. One way to get ideas about what to do is to think about a time when you did not have a craving. What were you doing? Where were you? Who was with you?

Use this Coping Card of ideas to make your plan.

Coping Card
Top 5 reasons for change
1. _____
2. _____
3. _____
4. _____
5. _____
Call: _____ Phone: _____
Call: _____ Phone: _____

Emergency Plan
*Leave the situation
*Go somewhere safe such as:
_____
*Take a few breaths and try to relax.

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visit: https://info2.camh.net/mailman/listinfo/subi.
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Potential Next Steps

- Review materials
- Joining the list serve
- Take resources to team meeting in the next month
- Talk to team about intake protocol, and include screening for brain injury
- Identify a team member who is willing to explore options
- Organize rounds or agency meeting on the topic

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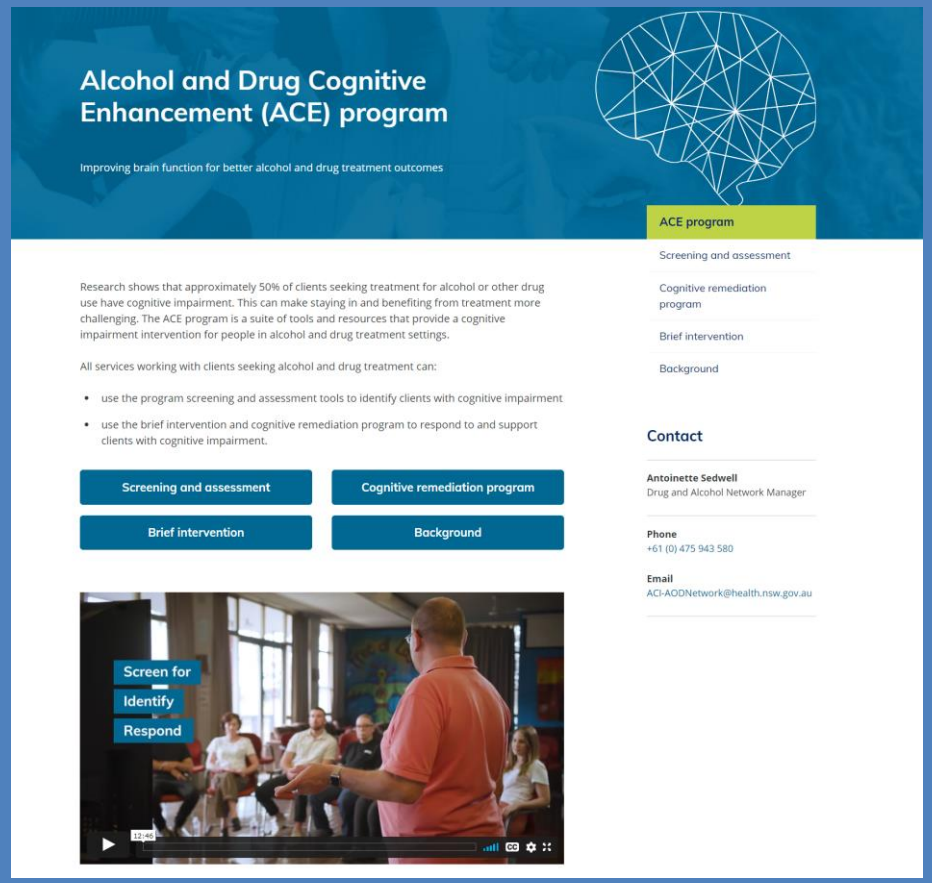
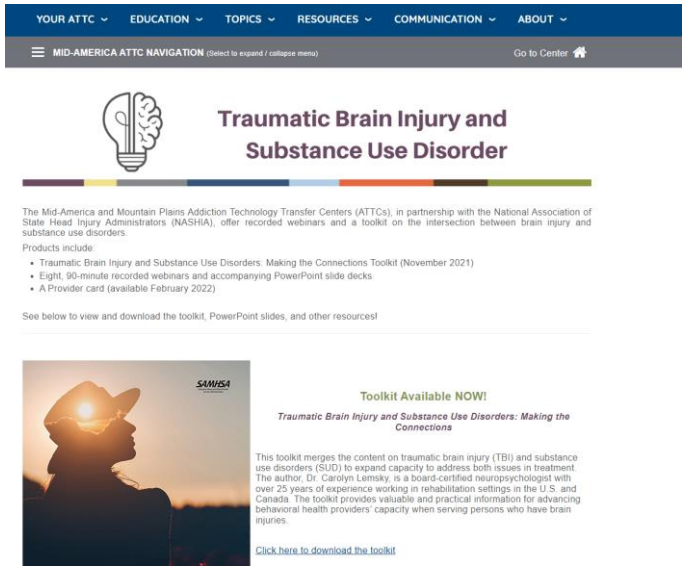
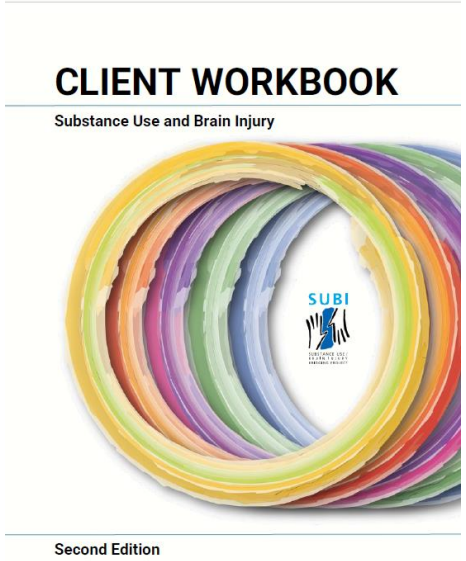
RESOURCES

https://aci.health.nsw.gov.au/projects/ace-program







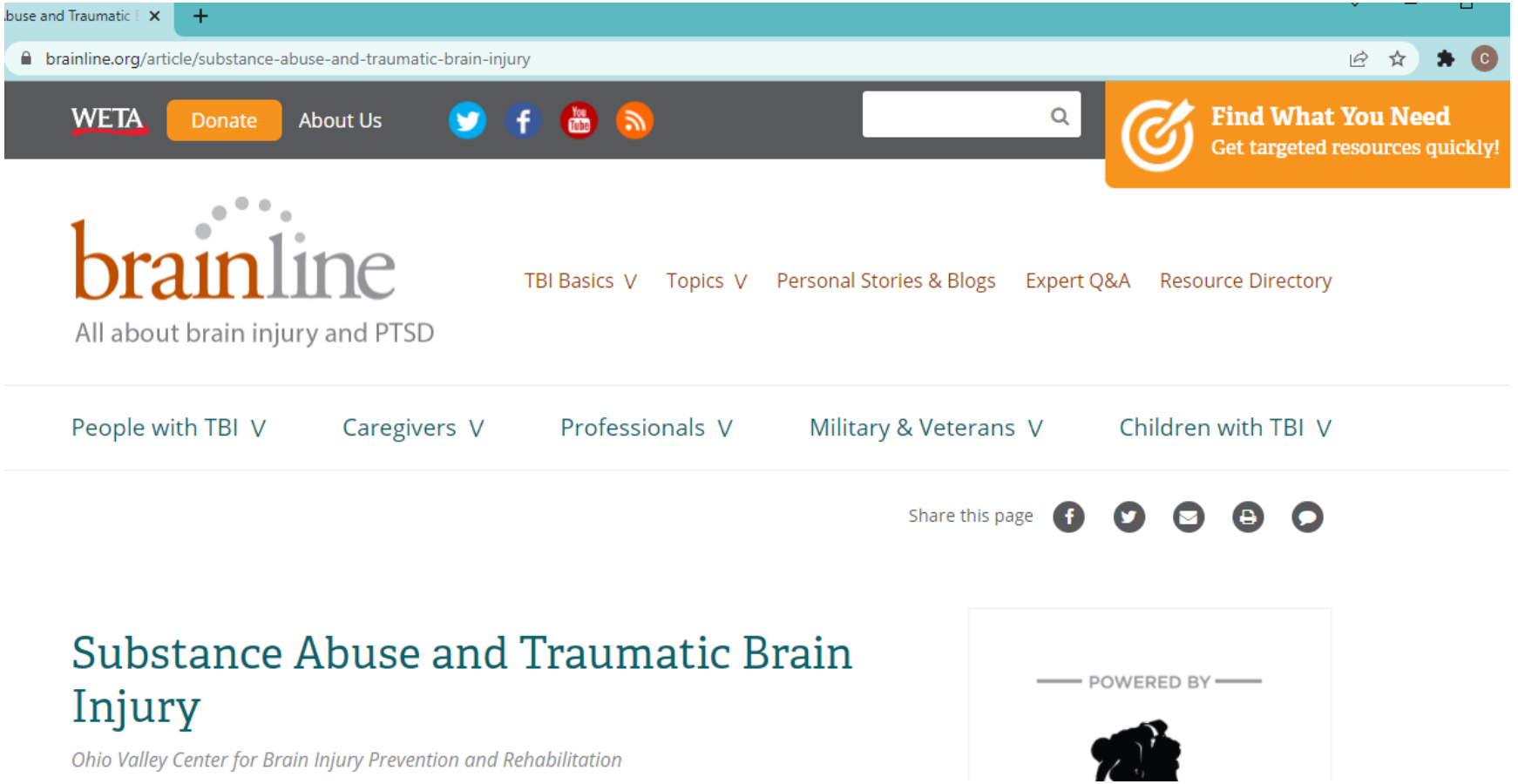
Where Can I Get these Resources?

https://attcnetwork.org/centers/mid-america-attc/traumatic-brain-injury-sud-series

WORKBOOK:

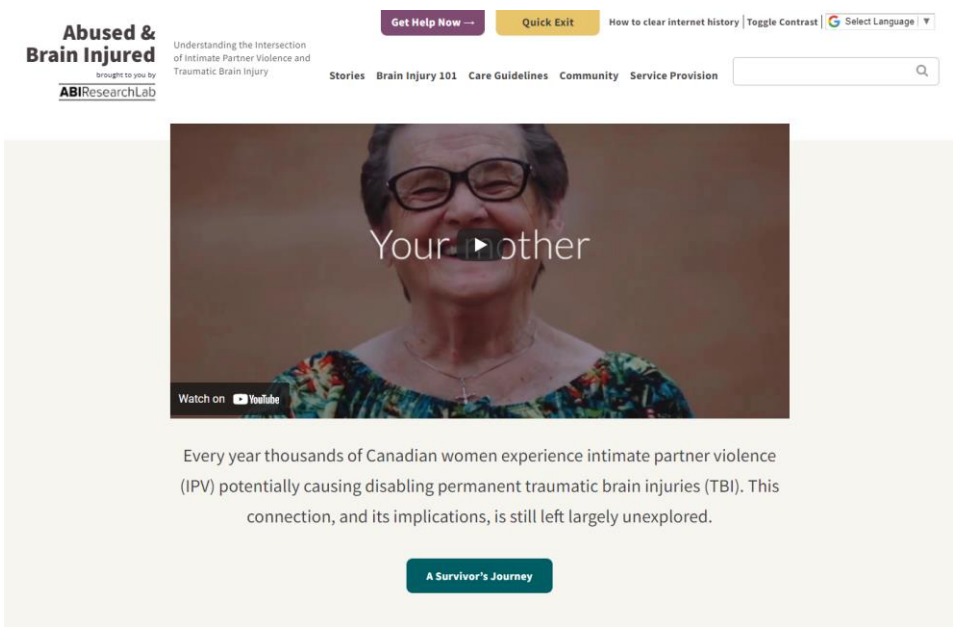
https://static1.squarespace.com/static/5eb2bae2bb8af12ca7ab9f12/t/61c216a89268ca613d4bd917/1640109740567/SUBI+2+FINAL+508+accessible+12_16_21.pdf

www.Brainline.org



https://abitoolkit.ca

- IVP Specific information
- Brain Injury Basics
- Screening with IVP-specific recommendations
- Recommendations for accommodations



https://www.youtube.com/watch?v=4IsDsvlD05c&t=236s

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130 Pembroke Road, Suite 100, Concord, NH 03301

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