BRAIN INJURY, THE HIDDEN EPIDEMIC;
WHY SCREENING MATTERS
Under Identification of TBI

Lack of Awareness

Lack of $ and Research

Lack of Training about TBI

Apparent Low Incidence

Individuals with TBI get misidentified or diagnosed

Individuals with TBI don’t get appropriate services
25% - 87% in prisons/jail

30% homeless

60% substance abuse

60% mental health

Children’s Healthcare of Atlanta; Julie Haarbauer-Krupa, PhD & CDC TBI in Prisons and Jails: An Unrecognized Problem
COMPONENTS TO SCREENING AND IDENTIFICATION

1. Education/awareness
2. Medical documentation
3. Establishing credible history
4. Assessing impact
5. Modifying interventions
6. Evaluation
EDUCATION AND AWARENESS

- Training regarding the sequelae of brain injury
- Important to have a foundational knowledge of brain injury
- Training should be provided to anyone conducting intake/screening
Best practice for identifying TBI is to obtain medical documentation.

Important to note that medical documentation only indicates an injury, not impact.

Documentation should be from a clinician trained in diagnosing TBI.
A study found that 42% of persons who indicated they had incurred a TBI as defined by the CDC did not seek medical attention (Corrigan, Bogner, 2007).
“The gold standard for determining prior TBI is self/parent-report as determined by a structured or in-depth interview” (Corrigan & Bogner, 2007) with more than 2 items related to TBI.

Comprehensive Health History Interview (Health history should be a face to face interview)

Credible history of TBI requires a skilled interviewer to know how to ask certain questions, to ask pointed questions multiple times and in a variety of ways, to establish the details of the TBI(s).
QUESTIONS SHOULD INCLUDE:

- Where
- When
- How
- Medical intervention(s) sought at the time, later, through the recovery
- Are answers medically plausible?
- Be aware of assumptions – for example, the report of a “scalp laceration” or “head injury” does not automatically define a “brain injury”
There needs to be a reported incident(s) as well as on-going symptoms/behaviors that persist beyond the incident (Corrigan & Bogner, 2007).

During the health interview, details of the incident should be clear and consistent. The description of the injury should not vary widely from report to report, from reporter to reporter.

If there are multiple injuries, specifics about each injury should be well-detailed and consistent.
INTERVIEWER MUST KNOW ACUTE AND LATENT SYMPTOMS OF TBI

**Acute symptoms:**

<table>
<thead>
<tr>
<th>Physical</th>
<th>Cognitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headache</td>
<td>Feeling in a “fog”</td>
</tr>
<tr>
<td>Blurred vision</td>
<td>Feeling “slowed down”</td>
</tr>
<tr>
<td>Poor balance</td>
<td>Slowed speech</td>
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<tr>
<td>Seeing “stars”</td>
<td>Easily confused</td>
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<td></td>
<td>Difficulty remembering/concentrating</td>
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<td></td>
<td>Distracted</td>
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<td></td>
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<tr>
<td>Physical</td>
<td></td>
</tr>
<tr>
<td>Headache</td>
<td>Dizziness</td>
</tr>
<tr>
<td>Blurred vision</td>
<td>Nausea/vomit</td>
</tr>
<tr>
<td>Poor balance</td>
<td>Sensitivity to light/sound</td>
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<tr>
<td>Seeing “stars”</td>
<td>Vacant/glassy look</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional</td>
<td></td>
</tr>
<tr>
<td>Personality change</td>
<td>Emotionally labile</td>
</tr>
<tr>
<td>Irritable</td>
<td>Sad</td>
</tr>
<tr>
<td>Anxious</td>
<td>Apathetic</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintenance</td>
<td></td>
</tr>
<tr>
<td>Fatigue</td>
<td>Drowsiness</td>
</tr>
<tr>
<td>Excess sleep</td>
<td>Sleeping less than usual</td>
</tr>
<tr>
<td></td>
<td>Unable to initiate or maintain sleep</td>
</tr>
</tbody>
</table>

Latent symptoms that emerge or develop later, symptoms that “morph”. Assess pre versus post-injury learning, behaviors, social skills, personality.
Screening tools are best if:
- Valid and reliable
- Sensitive to the population
- Appropriate to the setting
SCREENING TOOLS

- Brain Check Survey
  (www.cokidswithbraininjury.com)
- Brain Injury Screening Questionnaire
  (wayne.gordon@mountsinai.org)
- OSU TBI-ID
  (http://ohiovalley.org/informationeducation/screening/)
www.tbitac.hrsa.gov

Has a list of several screening tools for example;

- Alaska Screening Tool for Dual Diagnosis and TBI
- Safe Child Screening Tool (0-4), Nebraska
FORMAL “FOCUSED” ASSESSMENT

- Cognitive
- Neuropsychological
- Achievement
- Speech Language
- Occupational Therapy/Physical Therapy
- Adaptive
- Emotional/Behavioral/Executive Functions
Identification is the first step

Screening and Identification Protocol should include guidance regarding intervention, treatment etc.

Understanding resources is critical

Begin the process by addressing the “so-what”
COLORADO’S EXPERIENCE

- Getting Buy-In
  * Executive Order on TBI
  * Identifying target sites
EXECUTIVE ORDER ON TBI

- 12 State Agencies
- List of 7 recommendations
- Improve data collection, analysis and utilization of data related to incidence and prevalence of brain injury
IDENITIFYING TARGET SITES

- Went where the energy was
- Identified champions
- Did research to determine where under-identification was likely occurring
SITES ENGAGED IN SCREENING AND IDENTIFICATION IN COLORADO

- Division of Youth Corrections
- Colorado Mental Health Institute at Fort Logan
- Office of Behavioral Health, Jail screening
- School Districts
- Division of Vocational Rehabilitation
- Denver County Jail
- Denver Juvenile Probation
- Denver Veterans Administration/Community Mental Health Centers
- Department of Corrections
HOW IT WENT DOWN IN COLORADO: SPECIFIC EXAMPLES

1. Executive Order opened doors
2. Identified champions
3. Justified need (literature review)
4. Spoke with other states regarding lessons learned
5. Piloted and evaluated the effectiveness of the Protocol
DENVER COUNTY JAIL

- Champions: Board member/Chief Diggens
- Justified need through literature and getting buy-in from the chief psychologist of the Denver County Jail
- Provided education regarding brain injury to staff
- Addressed the “so what”, Chief Diggens’ primary concern
- Partnered with the University of Denver to pilot and evaluate
- Piloted over the summer
- Next step to present finding to Chief Diggens and expand on the pilot
Clinical Interview → OSU TBI-ID → NAB Screen or ANAM Assessment → Effort Tests → Reporting
36 inmates went through the protocol
26/36 screened positive using OSU-TBI ID
33/36 remained to have plausible BI after assessment
1 individual failed effort testing
On average took 1.5 hours to administer
Generated a 2 page report
STUDENT PERSPECTIVES

- All tests were easy to administer and of short duration
- OSU TBI ID was necessary to perform to get a timeline of events from inmates
- Assessments were in-depth and across multiple cognitive domains
- Effort tests provided validity support and gave more info on symptoms
- Inmates were positive and engaged throughout the experience, they were appreciative and curious of their results.
Champions: Division Director and counselors

Justified need through literature, experience from Nebraska DVR, and counselor’s experiences

Developed a work group to develop protocol

Provided education regarding brain injury to staff

Partnered with the University of Denver to pilot and evaluate

Piloted in three offices for one year

Next step is to present data to the Field Management Leadership Team
Intake -> OSU TBI-ID -> Refer for Psych or Neuropsych

Accommodations

Accommodations checklist
Base Line Data (AWARE):

- Current number of individuals DVR is serving who are identified with TBI.
- For those client’s identified with TBI what is the rate of attrition from eligibility to plan.
- What assessments have been done, e.g. neuropsych evals, clinical psych evals.
- How much money has been spent on these evaluations.
Base Line Data cont....
- What is the length of time from intake to plan.
- Current number of successful closures.
- Length of time from intake to successful closure.
- Length from plan to successful closure.
- Number of participants with TBI requiring supported employment services.
- Number of participants with TBI choosing to seek self employment options.
DVR DATA COLLECTION

Protocol Data:
- Number of screens positive for TBI (OSU TBI-ID)
- Referral made for neuropsychological evaluation (AWARE and OSU TBI-ID)
- Referral made for clinical psychological evaluation (AWARE and OSU TBI-ID)
Protocol Data:
- Did participant come with medical documentation of TBI (OSU TBI-ID)?
- Did the participant come with a completed neuropsychological or psychological evaluation (OSU TBI-ID)?
- Responses to the Accommodations Check List (Accommodations Check List)
171 screens conducted

59 positive
(40/counselors, 58/student, 59/evaluator)

11 Assessments
(6 psychological and 5 neuropsychological)
Pilot site Counselors felt it would be best if there were questions regarding potential brain injury on the application that could then trigger need to screen/asses etc.

- 75% found OSU TBI-ID helpful
- 75% found it easy to administer
- 58.3% easy to score
- 50% easy to interpret
- Counselors felt that the accommodations check list added to the already existing burden of paperwork requirements
Evaluating data to answer questions previously discussed

Pending analysis, may need to modify protocol to add questions to application that would trigger need to screen etc.

Further training

Development of a technical assistance team within DVR
DENVER JUVENILE PROBATION

- Champions: Lead Probation Officer and Mental Health Team Lead
- They came to us! Justified through literature and anecdotal experiences of team
- Provided education regarding brain injury to staff
- Addressed the “so-what”
- Partnered with Probation Team to develop the protocol
- Team collecting data from day one
- Next step to scale up to other Judicial Districts
Pre Screen Sentence interview → OSU TBI-ID → Conduct Assessments
Develop Accommodations ← Recommendations for Sentencing
- 82 youth screened
- 34 screened positive
- 2-3 minutes to complete if negative and 5-10 if positive
- Positive screens trigger further assessment
GETTING STARTED IN YOUR STATE

- Identify Entities for Screening and Identification Protocol
- Get the buy-in
- Develop the protocol (no need to rebuild the wheel)
- Pilot
- Build in evaluation from start to finish
- Continuous improvement
CONSIDERATIONS

- Time
- Cost
- Relevance
- Timing
- Need for on-going support/technical assistance and consistent follow up
- Evaluating if screening and identification have an impact on success
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