



MAYO PORTLAND ADAPTABILITY INVENTORY: APPLICATION CONSIDERATIONS

Dave Anders, MS, CCC-SLP, CBIST-AP
(Clinical Director – On With Life)

David Salisbury, Psy.D., ABPP-CN
(Director of Clinical Operations- Pate Rehabilitation)



DISCLOSURES

- The development of this presentation is a collaborative effort among the organization in the Foundation of Advance Brain Rehabilitation (FABR).
- These presenters have no significant financial relationship with any commercial or proprietary entity that produces health-care related products and/or services relevant to the content of this presentation.

OBJECTIVE:

At the end of the presentation, Listeners will demonstrate an understanding of the development, use, and administration of the MPAI for adults with acquired brain injury.

ACQUIRED BRAIN INJURY BRAIN INJURY

ABI = an injury to the brain which is NOT hereditary, congenital, or degenerative.

- **Traumatic Brain Injury (today's focus)**
- Anoxia or Hypoxia
- Strokes, Aneurysms & other vascular conditions
- Infectious Disease
- Intracranial Tumors
- Meningitis
- Encephalitis
- Toxic Exposure
- Seizure Disorders



TRAUMATIC BRAIN INJURY (TBI) IN THE U.S.

- An estimated 2.9 million emergency department visits each year
- 2.2 million (80%) are treated and released from ED
- Most likely to sustain TBI: Ages 0 – 4, 15-19, and >65
- Males: 1.4 times more likely than females

POST-TBI HEALTH COMPLICATIONS

- Seizures
- Hydrocephalus
- CSF leaks
- Infections
- Cranial Nerve Injuries
- Pain & headache
- Sleep disturbance
- Hypertension
- Diabetes
- Hormonal changes

SCALES OF BRAIN INJURY & FUNCTION

At the scene or in the emergency room:

Glasgow Coma Scale

Mild (13-15)

Moderate (9-12)

Severe (3-8)

Inpatient rehabilitation:

Rancho Los Amigos Scale

FIM

Post-hospital across lifespan

MPAI-4



POTENTIAL AREAS OF IMPAIRMENT FOLLOWING BRAIN INJURY

PHYSICAL

- Paralysis/weakness
- Spasticity
- Balance
- Bowel and/or Bladder control
- Swallowing

SENSORY

- Vision
- Smell
- Hearing



POTENTIAL AREAS OF IMPAIRMENT FOLLOWING BRAIN INJURY

COGNITIVE

- Consciousness/Level of arousal
- Attention
- Mental Speed
- Orientation
- Memory
- Language
- Visuospatial
- Executive Functions
- Social Skills & Nonverbal Communication
- Awareness of Deficits





POTENTIAL AREAS OF IMPAIRMENT FOLLOWING BRAIN INJURY

PSYCHOLOGICAL

- Depression
- Irritability/Anger
- Anxiety
- Mood swings
- Apathy
- Inappropriate behavior or remarks
- Impulsive

POTENTIAL CHALLENGES FOLLOWING BRAIN INJURY

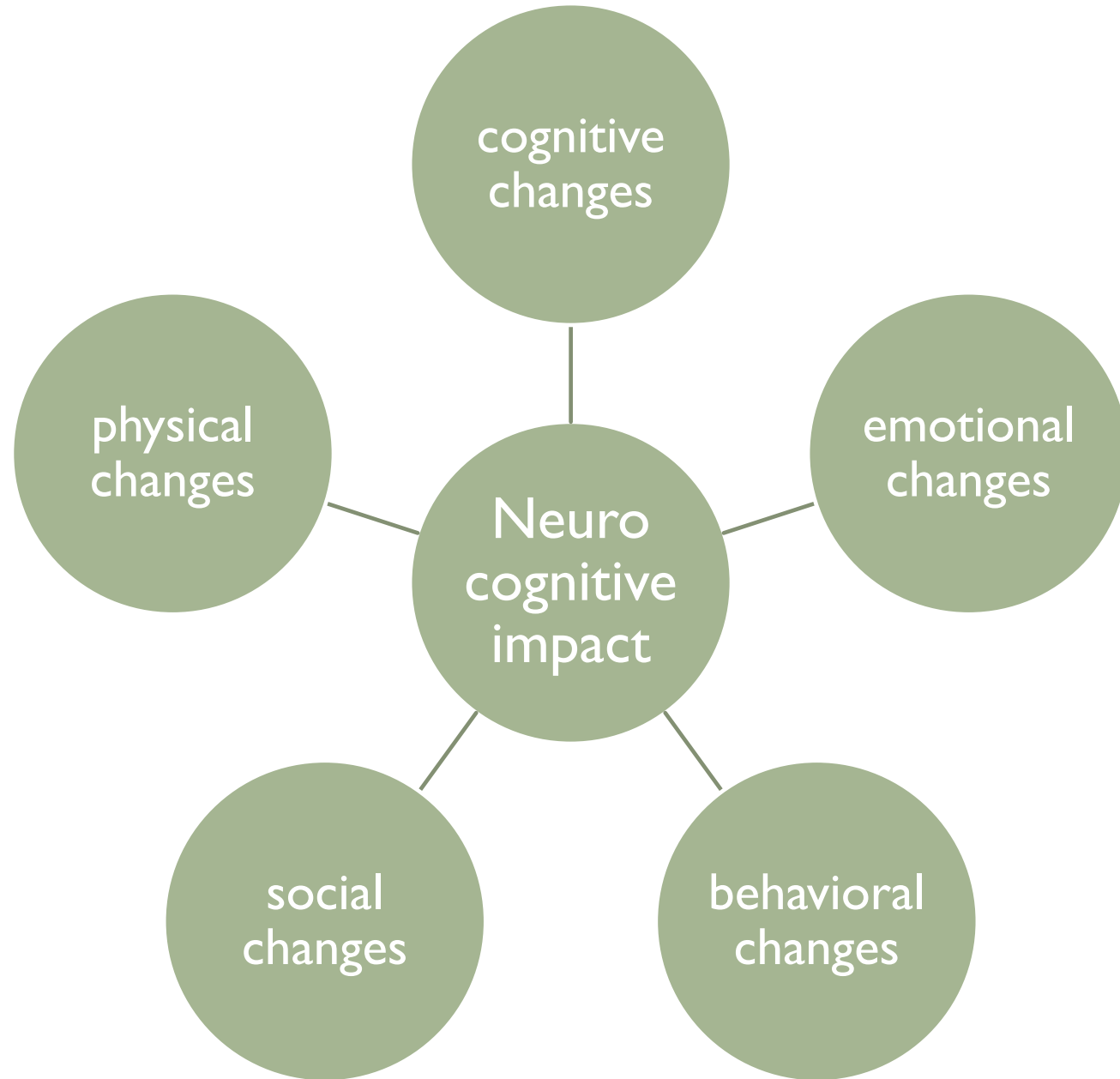
- Return to independent self-care
- Return to home activities
 - (e.g., cooking, managing medications, finances, parenting, etc.)
- Return to driving
- Return to work or school

TBI RECOVERY

- Improvement seen most in the first 3-6 months post-injury
- Plateau in improvement with physical recovery often first
- Cognitive recovery slow but you can see improvements up to two years after
- Improvements in some areas of functioning or independence can be seen at any point with the right match of treatment if basic survivor skills allow for improvement in an area. Some of this may be more based on use of compensatory strategies, assisted technology, structured environment or working with support persons
- Recovery can be derailed by any health complications, substance use, psychiatric problems or other issues

MPAI-4 PURPOSE AND USE

- The MPAI-4 was originally developed for the following purposes:
 - To assist in the clinical evaluation of people during the post-acute (posthospital) period following acquired brain injury (ABI)
 - To assist in the evaluation of rehabilitation programs designed to serve these people
 - To better understand the long-term outcomes of acquired brain injury (ABI).
- Level 1: Clinical eligibility to meet diagnostic definitions (VA)
- Level 2: Functional assessment determines intensity of service need
- Level 3: Service planning assessments



MAYO PORTLAND
ADAPTABILITY
INVENTORY A
NATIONALLY
ACCEPTED STANDARD



MPAI ITEM REVIEW

- Please have the following available as we discuss individual MPAI-4 Items
 - MPAI-4 Training Manual
 - MPAI-4 Scoring Form
 - 2015 OutcomeInfo T-Score Conversion Tables



SCORING

- 0: No problems
- 1: Mild problems; but does not interfere with activity
- 2: Mild problem; interferes with activity 5-24% of the time
- 3: Moderate problem; interferes with activity 25-75%
- 4: Severe problem; interferes with activity 76-100%

SCORING CONSIDERATIONS

- Please reference the individual item scoring guides (MPAI Manual pp. 7-38) to assist you in determining individual item raw scores.
- The rating categories for each item are large and if you're not sure, please rate up (more impaired)
- Because it is often difficult or impossible to determine accurately the individual's functional capacities before injury, comparisons with preinjury status are avoided in rating the 29 items for brain injury outcome included in the MPAI.

ABILITY INDEX

- Mobility
- Use of Hands
- Vision
- Audition
- Motor Speech
- Communication

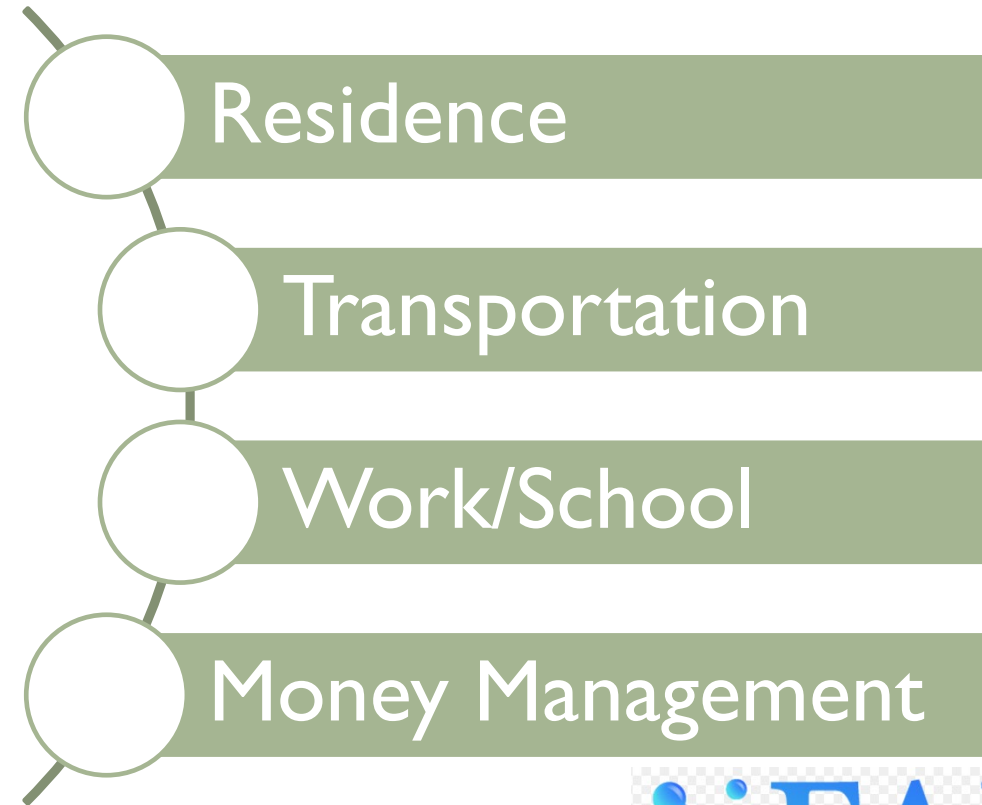
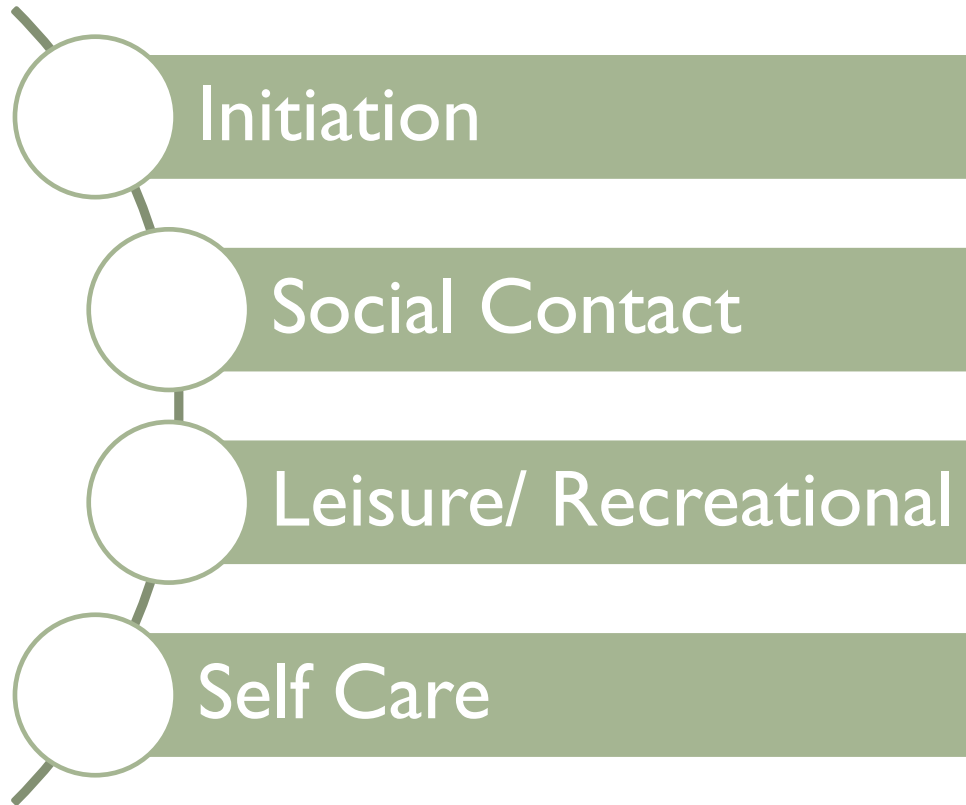
- Attention/ Concentration
- Memory
- Fund of Information
- Novel Problem Solving
- Visuospatial Abilities
- Dizziness

ADJUSTMENT INDEX

- Anxiety
- Depression
- Irritability, Anger, Aggression
- Pain and Headache
- Fatigue
- Sensitivity to Mild Symptoms

- Inappropriate Social Interaction
- Impaired Self-Awareness
- Family/Significant Relationships
- Initiation
- Social Contact
- Leisure/ Recreational Activity

PARTICIPATION INDEX



PRE-EXISTING AND ASSOCIATED CONDITIONS

-
- These 6 items do not contribute to the total score or subscale scores for the MPAI.
 - Items define factors that are important to consider in planning rehabilitation or other supports / services
 - Items are rated for both pre- and post-injury status.

T-SCORE CONVERSION CONSIDERATIONS AND INSTRUCTIONS

- **User and rater qualifications**

- **T-Score Reference Guide**

- 30 and below represents individuals with relatively good outcomes
 - 30-50 suggests mild limitations
 - 60+ suggests severe limitations
- Assessors will utilize 2015 OutcomelInfo tables to convert raw scores to T-scores. At the time of this training, these conversion tables are available only to this group.

SCORING: ABILITY INDEX

Abilities Subscale

Rescore item 4. Original score = _____

If original score = 0, new score = 0

If original score = 1, 2, or 3, new score = 1

If original score = 4, new score = 3

A. New score for item 4 = _____

B. Sum of scores for items 1-3 and 5-12 = _____

(use highest score for 7A or 7B if using 2006 Mayo or
2006 National tables; add in BOTH 7A and 7B if using
2015 National OutcomeInfo tables)

Sum of A and B = Raw Score for Abilities subscale = _____ (place in Table below)

SCORING:ADJUSTMENT INDEX

Adjustment Subscale

Rescore item 16. Original score = _____

If original score = 0, new score = 0

If original score = 1 or 2, new score = 1.

If original score = 3 or 4, new score = 2

C. New score for item 16 = _____

D. Sum of scores for items 13-15 and 17-24 _____

Sum of C and D = Raw Score for Adjustment Subscale _____

_____ (place in Table below)

SCORING: PARTICIPATION INDEX

Participation Subscale

Rescore item 27. Original score = _____

If original score = 0 or 1, new score = 0

If original score = 2 or 3, new score = 1

If original score = 4, new score = 3

Rescore item 28A or 28B. Original score = _____

If original score = 0, new score = 0

If original score = 1 or 2, new score = 1

If original score = 3 or 4, new score = 3

E. New score for item 27 = _____

F. New score for item 28A or 28B = _____

G. Sum of scores for items 22-24 = _____ (place in Table below)

H. Sum of scores for items 25, 26, 29 = _____

Sum of E through H = Raw Score for Participation Subscale = _____ (place in Table below)

T-SCORE CONVERSION: SUBSCALES & TOTAL SCORE

Use Reference Tables to Convert Raw Scores to Standard Scores

	Raw Scores (from worksheet above)	Standard (Obtain from appropriate reference Table)
I. Ability Subscale (Items 1-12)	_____	_____
II. Adjustment Subscale (Items 13-24)	_____	_____
III. Participation Subscale (Items 22-29)	_____	_____
IV. Subtotal of Subscale Raw Scores (I-III)	_____	_____
V. Sum of scores for items 22-24	_____	_____
VI. Subtract from V. from IV = Total Score	_____	_____

REVIEW SESSION PREPARATION:

- Please review the training case (Bob).
- Score each item of the MPAI-4 based on the information provided.
 - Note: Please complete the MPAI-4 for **both** Bob's admission status and discharge status.
- Complete the raw score to T-score conversions for the 2 assessments using the 2015 OutcomeInfo tables.
- Feel free to submit questions to Dr. Karmarkar (Kshitija.Karmarkar@dmas.virginia.gov). We will address them in the review session.



THANK YOU!

Dave Anders, MS, CCC-SLP, CBIST-AP

On With Life Clinical Director

Office: (515) 289-9620 | Cell: (515) 822-3895 | Fax: (515) 964-0567

dave.anders@onwithlife.org

David Salisbury, Psy.D., ABPP-CN

Director of Clinical Operations

Cell: (214) 425-4968 / Office: (972) 241-9334 | Fax: (972) 241-0155

David.Salisbury@rehabwithoutwalls.com

