### Outcome Domain:

Adaptive and Daily Living Skills

### Domain Description and Relevance in TBI:

“Adaptive and daily life functioning consists of multiple domains and involve the ability to “adapt” to (e.g., adjust, vary, fit one’s behaviors / actions) and manage one's surroundings to effectively function in home, school and community life. This domain also includes children’s functional activity and activity limitations.” - McCauley et al. 2012

Table CDE Classification by Type of TBI Study and Relevant Population for Recommended Adaptive and Daily Living Skills Outcome Measures

| Outcome Measure Name | Relevant TBI Population | Acute Hospitalized | Moderate/ Severe Rehabilitation | Concussion/ Mild TBI | Epidemiology |
| --- | --- | --- | --- | --- | --- |
| Adaptive Behavior Assessment System-Revised (ABAS-2) | Pediatric | Supplemental | Supplemental | Supplemental | Supplemental |
| Functional Independence Measure for Children (WeeFIM)\* | Pediatric | Basic | Basic | Supplemental | Supplemental |
| Mayo-Portland Adaptability Inventory (MPAI-4) | Pediatric | Supplemental | Supplemental | Supplemental | Supplemental |
| Pediatric Evaluation of Disability Inventory (PEDI), Self Care subscale | Pediatric | Basic | Basic | Basic | Supplemental |
| Vineland Adaptive Behavior Scales, 2nd Edition (VABS-II) | Pediatric | Supplemental | Supplemental | Supplemental | Supplemental |

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## Adaptive behavior assessment system, 2nd edition (ABAS-II)

### DESCRIPTION

The ABAS-II measures adaptive behavior, using multiple respondents (Parent/ Primary Caregiver, Teacher/ Daycare Provider, Parent, Teacher, Adult) to evaluate function across a variety of environments. Test results include four domain composite scores (Conceptual, Social, Practical, and General Adaptive Composite) and 10 skill area scores (Communication, Community Use, Functional Academics, Health and Safety, Home or School Living, Leisure, Self-Care, Self-Direction, Social, and Work/Motor). Motor skill area replaces the Work skill area on the infant-preschool forms.

### PERMISSIBLE VALUES

Norm-referenced scaled scores and test-age equivalents are given for the 10 Skill Areas (M=10, SD=3). For the four domains and the General Adaptive Composite, norm-referenced standard scores (M=100, SD=15) and age-based percentile ranks are given. An adaptive skill classification of Extremely Low, Borderline, Below Average, Average, Above Average, Superior, and Very Superior is given for each rating.

### PROCEDURES

Rating scale may be completed by parent, caregiver, or teacher. Administration time is 15-20 minutes. Skills commensurate with at least a Master’s degree level in psychology, education, or related field are recommended for interpretation.

### COMMENTS

The measure is suitable to use from birth to 89 years.

### RATIONALE

“The ABAS-II and original ABAS have been used often with children and adults (infancy to 89 years) with developmental and intellectual disabilities. Although the ABAS-II has evidence of reliability and validity, there are limited published studies in children with TBI.” - McCauley et al. 2012

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## Functional Independence Measure for Children (WeeFIM™)

### DESCRIPTION

The WeeFIM builds on the format of the Functional Independence Measure for Adults of the Uniform Data System for Medical Rehabilitation, tracking disability outcomes in children. Specifically, this assessment measures independence in self-care, sphincter control, transfers, locomotion, communication, and social cognition. The WeeFIM consists of 18 items within the six domains.

### PERMISSIBLE VALUES

A 7-level Likert scale is used to score level of dependence. Scores for the WeeFIM range from 18 (complete dependence in all skills) to 126 (complete independence in all skills).

### PROCEDURES

Administered through an interview by a trained rater or a telephone interview of caregiver or subject by trained rater. The test takes between 20-30 minutes.

### COMMENTS

The measure is used with children aged 6 months to 7 years. It can be used by children above 7 years if their abilities are below that of 7-year-olds without disabilities.

### RATIONALE

The WeeFIM “has extensive evidence of reliability, validity, and responsiveness to change during inpatient rehabilitation for children and youth with TBI.” - McCauley et al. 2012

### REFERENCES

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## Mayo-Portland Adaptability Inventory (MPAI-4)

### DESCRIPTION

The MPAI-4 consists of thirty items rated on a 5-point scale (0-4) ranging from normal for age to severely restricted. Items represent key indicators in three inter-related subdomains represented by three subscales: Ability Index (physical and cognitive abilities), Adjustment Index (emotional and behavioral self-regulation, interpersonal activities), and Participation Index (community integration). An overall score and scores for each index may be obtained. Specified modifications to the rating scales allow the measure to be applied across the age span from childhood through adulthood.

### PERMISSIBLE VALUES

Total score range = 0-115. Raw total and index scores may be converted to T-scores with reference to a national sample of 386 individuals with brain injury.

### PROCEDURES

The test may be completed by consensus of a professional team, by a single professional, by a person with brain injury, or by a significant other. Ratings are based on all available information. Completion usually requires 20-30 minutes. Comparison of ratings from various sources, i.e., professional vs. person with brain injury vs. significant others may reveal variations in perception of and value placed on limitations. The 8-item Participation Index can be used independently and administered in person or by telephone to assess involvement in daily activities in the home and community; completion time is about 10 minutes.

### COMMENTS

Adults and children with acquired brain injury. Translations are available in German, Spanish, Danish, Swedish, French, Italian, and Portuguese.

### RATIONALE

“The MPAI-4 was modified for use with children and youth with TBI and acquired brain injury in inpatient and outpatient rehabilitation settings. It has preliminary evidence of validity and reliability and clinical utility based on one study with a sample of children and youth with acquired brain injury from one hospital.” - McCauley et al. 2012

### REFERENCES

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Detailed manual, forms, and translations available for download at: [The Center for Outcome Measurement in Brain Injury: Mayo Portland Adaptability Inventory](http://www.tbims.org/combi/mpai)

## Pediatric Evaluation of Disability Inventory (PEDI) Self Care Subscale

### DESCRIPTION

The PEDI is a descriptive measure of a child’s current functional capabilities performance and also tracks changes over time. The measure has three content areas: Self-care, Mobility and Social Function. The self-care sub-domain includes activities such as eating, grooming, dressing, bathing, etc.

### PERMISSIBLE VALUES

Scores for the PEDI range between 0-100, with higher scores indicating a lesser degree of disability.

### PROCEDURES

The PEDI takes between 45 and 60 minutes to administer. Skills commensurate with at least a Master’s degree level in psychology, education, or related field are recommended for interpretation. The PEDI is a paper based instrument. The computerized PEDI-MCAT provides individual patient reports that summarize a patient’s functional status and provide a comparison of scores to the norm.

### COMMENTS

The PEDI™ is recommended for children in acute and rehabilitation settings and for post-discharge follow-up. The measure is appropriate for ages 6 months to 7 years.

### RATIONALE

The PEDI “has been used in many studies with children with TBI and other acquired brain injuries, and has established evidence of reliability, validity and responsiveness to change during inpatient rehabilitation and post-discharge follow-up.” - McCauley et al. 2012

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## Vineland Adaptive Behavior Scales, 2nd edition (VABS-II)

### DESCRIPTION

The VABS-II measures personal and social skills needed in an individual’s everyday life. There are five domains: Communication, Daily Living Skills, Socialization, Motor Skills, and Maladaptive Behavior Index (optional domain). Each of the domains has 2 -3 sub-domains. The measure includes four forms: survey interview, parent/ caregiver rating, expanded interview and teacher rating.

### PERMISSIBLE VALUES

Standard scores with mean = 100, SD = 15, percentile ranks, adaptive levels are provided for Domains and Adaptive Behavior Composite. Subdomains are scored with a V-scale score (mean= 15, SD = 3), adaptive levels, and age equivalents.

### PROCEDURE

Administration is by paper and pencil. The test takes between 20 and 60 minutes.

### COMMENTS

This instrument may be used from birth to 90 years.

### RATIONALE

“The VABS-II and the original VABS have established evidence of reliability and validity and have been used in many pediatric TBI studies primarily for studying long-term sequelae, family functioning, and school adaptation. The VABS-II can be used with a broad age range of individuals (infancy to 89 years) and test procedures (i.e., age range allows for establishing accurate basal level) and is useful when working with low cognitive functioning populations such as those with severe TBI.” - McCauley et al. 2012

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