## Outcome Domain:

Family and Environment

### Domain Description and Relevance in TBI:

“This domain includes moderators of outcome related to family and environment as well as the consequences to family.” - McCauley et al. 2012

Table CDE Classification by Type of TBI Study and Relevant Population for Recommended Family and Environment Outcome Measures.

| Outcome Measure Name | Relevant TBI Population | Acute Hospitalized | Moderate/ Severe Rehabilitation | Concussion/ Mild TBI | Epidemiology |
| --- | --- | --- | --- | --- | --- |
| Child and Adolescent Scale of Environment (CASE) | Pediatric  | Supplemental | Supplemental | Supplemental | Supplemental |
| Conflict Behavior Questionnaire (CBQ)/Interaction Behavior Questionnaire (IBQ) | Pediatric  | Supplemental | Supplemental | Supplemental | Supplemental |
| Family Assessment Device (FAD) | Pediatric  | Supplemental | Supplemental | Supplemental | Supplemental |
| Family Burden of Injury Interview (self-report or interview) | Pediatric  | Supplemental | Supplemental | Supplemental | Supplemental |
| Family History Research Diagnostic Criteria (FHRDC)  | Pediatric  | Supplemental | Supplemental | Supplemental | Supplemental |

### References

McCauley SR, Wilde EA, Anderson VA, Bedell G, Beers SR, Campbell TF, Chapman SB, Ewing-Cobbs L, Gerring JP, Gioia GA, Levin HS, Michaud LJ, Prasad MR, Swaine BR, Turkstra LS, Wade SL, Yeates KO. Recommendations for the Use of Common Outcome Measures in Pediatric Traumatic Brain Injury Research. J Neurotrauma. 2012 March; 29: 678-705. PubMed PMID: 21644810.

## Child & Adolescent Scale of Environment (CASE)

### DESCRIPTION

The CASE consists of 18 items that measure environmental problems that might hinder a child’s participation at home, school, and in the community. These problems may be physical, social, or attitudinal problems in the community, including lack of resources, crime, and negative perceptions of others. The scale is an adaptation of the Craig Hospital Inventory of Environment Factors (CHIEF).

### PERMISSIBLE VALUES

Scores range from 0 to 100, with higher scores reflecting more environment problems and/or a greater impact of problems.

### PROCEDURE

The CASE is completed by the parent and can be administered in about 5 minutes.

### COMMENTS

The intended population is family caregivers of children and youth with disabilities.

### RATIONALE

“The CASE is a developing instrument with evidence of reliability and validity and has been used in a number of studies with children and youth with traumatic and other acquired brain injuries. The CASE was selected over the CHIEF because the CASE has been used in a number of studies specific to children and youth with TBI and acquired brain injury.” – McCauley et al. 2012

### REFERENCES

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Ziviani, J., Desha, L., Feeney, R., and Boyd, R. (2010). Measures of participation outcomes and environmental considerations for children with acquired brain injury: A systematic review. Brain Imp 11(2), 93-112.

## Conflict Behavior Questionnaire (CBQ) / Interaction Behavior Questionnaire (IBQ)

### DESCRIPTION

The parent-adolescent relationship can be assessed using a 20-item short form of the CBQ, also known as the Interaction Behavior Questionnaire (IBQ). The questionnaire is in the public domain and reliably measures whether or not a family is experiencing distress.

### PERMISSIBLE VALUES

Raw scores are the number of items (up to 20) answered in a negative direction. Lower scores suggest better functioning.

### PROCEDURE

Administration takes about 5 minutes. Separate versions are available for parents and adolescents**.**

### COMMENTS

The population for use is parents and adolescent children.

### RATIONALE

“The CBQ/IBQ has been shown to be responsive to changes in family interactions as a consequence of family-centered treatments for pediatric TBI.” – McCauley et al. 2010

### REFERENCES

Prinz, R., Foster, S., Kent, R., and KD, O. L. (1979). Multivariate assessment of conflict in distressed and nondistressed parent-adolescent dyads. J Appl Behav Anal 12, 691-700.

Robin, A., and Foster, S. (1989). Negotiating parent adolescent conflict: A behavioral family systems approach. Guilford: New York.

Wade, S., Walz, N., Carey, J., and Williams, K. (2008). Preliminary efficacy of a web-based family problem solving treatment program for adolescents with traumatic brain injury. J Head Trauma Rehabil 23, 369-377."

## McMaster Family Assessment Device

### DESCRIPTION

FAD is a 60-item self-report instrument with responses rated on a 4-point likert scale from “Strongly agree to Strongly Disagree”. There is a General Functioning scale and six subscales -- Problem Solving, Communication, Roles, Affective Responsiveness, Affective Involvement, and Behavior Control.

### PERMISSIBLE VALUES

Total score ranges from 1 to 4, where higher scores indicate unhealthy functioning. Raw scores can be calculated for the six subscales (Problem Solving, Communication, Roles, Affective Responsiveness, Affective Involvement, and Behavior Control) and for the General Functioning scale. There is no commercially available manual or representative norms. Descriptive statistics are available for a variety of patient samples including healthy community dwelling controls.

### PROCEDURE

Patients and/or family members read. Interpretation requires doctoral level training in psychology. Administration time is 10-15 minutes.

### COMMENTS

Proper administration requires that the test taker be able to respond meaningfully to the items. The test taker must be able to see, read, and comprehend the items. Average reading difficulty is about the 6th-grade level.

### RATIONALE

The FAD assesses structural and organizational properties of families and the patterns of transactions among family members. It has been found to distinguish between healthy and unhealthy families, and has been used in TBI samples. The FAD-GF has been used to assess global family functioning in numerous studies of children with TBI and their families. It is brief (less than 5 minutes to complete) and available free of charge.

### REFERENCES

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Yeates, K., Swift, E., Taylor, H., Wade, S., Drotar, D., Stancin, T., and Minich, N. (2004). Shortand long-term social outcomes following pediatric traumatic brain injury. J Int Neuropsychol Soc 10, 412-426."

## Family Burden of Injury - Interview and Self Report (FBII)

### DESCRIPTION

The FBII measures stress related to injury, with both a structured interview and self-report version available. The interview version has proven reliability and validity and has been used in TBI. The self-report version is undergoing psychometric analysis.

### PERMISSIBLE VALUES

Scores range from 0 (not at all stressful) to 4 (extremely stressful). Individual item scores are averaged across the questionnaire for a total score.

### PROCEDURE

Parents complete the questionnaire. Administration time is around 20 minutes for the interview or 5 for the self-report form.

### COMMENTS

The intended population for use is families affected by childhood traumatic head injuries.

### RATIONALE

The FBII has been used in numerous studies of recovery following TBI. Reliability and validity of this measure has been established. The FBII has been broadly used internationally; however, reliability and validity for the translated versions are lacking. The measure is freely available.
Data on approximately 300 families of children with TBI have been collected worldwide and are awaiting further psychometric analyses. The measure is freely available.

### REFERENCES

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## Family History Research Diagnostic Criteria (FHRDC) modified to DSM-IV-TR

### DESCRIPTION

The FHRDC was developed to assess family psychiatric history by means of interviewing the patient or relative who provides information about all family members. This “family history” method is contrasted with the “family study” method in which every family member is interviewed to assess family psychiatric history. Underestimation of diagnoses in the family history method compared with the family study method is lessened by using diagnostic criteria during the specific questioning. The original semi-structured interview has been modified by using DSM-IV-TR criteria.

### PERMISSIBLE VALUES

Scores of 0 = no diagnosis in a particular family member; 1 = possible specific disorder diagnosis in a particular family member; 2 = probable specific disorder diagnosis in a particular family member. The overall family psychiatric history score has been reported as follows: 0 = no family psychiatric disorder; 1 = at least one member of the family met criteria for a psychiatric disorder but no treatment was received; 2 = a family member met criteria for a psychiatric disorder and has received outpatient treatment or been arrested for antisocial behavior; 3 = a family member met criteria for a psychiatric disorder and has had inpatient psychiatric treatment or has been incarcerated.

### PROCEDURE

The instrument is generally administered by a clinician or research assistant with one parent of the pediatric patient with TBI. It takes between 5-15 minutes to administer depending on whether only 1st degree relatives or both 1st and 2nd degree relatives are the focus of inquiry and depending on how many individuals have a psychiatric disorder.

### COMMENTS

The interview is appropriate to capture psychiatric status of family members of any age.

### RATIONALE

The interview has accepted reliability and validity and is useful in determining the influence of overall family psychiatric history or of a family history of a specific disorder on the development of psychiatric disorders that emerge after TBI in children.

### REFERENCES

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