

Outcome Oriented

The Online Newsletter of the
Center for Outcome Measurement in Brain Injury (COMBI)

Summer 1999

COMBI Recognizes...

The following Traumatic Brain Injury Model System Centers deserve special recognition for their contributions to the COMBI. Without their expertise and participation this project would not be possible.

Santa Clara Valley Medical Center
San Jose, CA

The Institute for Rehabilitation Research
Houston, TX

Rehabilitation Institute of Michigan
Detroit, MI

The Ohio State University
Columbus, Ohio

The Mayo Medical Center
Rochester, MN

Medical College of Virginia
Richmond, VA

Craig Hospital
Englewood, CO

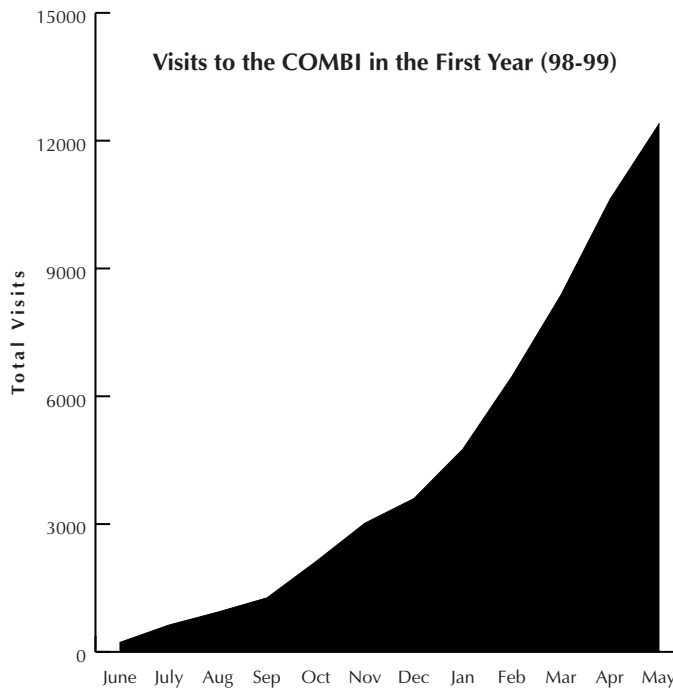
Moss Rehabilitation Research Institute
Philadelphia, PA

The COMBI is coordinated by Santa Clara Valley Medical Center and is funded by the US Dept. of Education, Office of Special Education & Rehabilitative Services (**OSERS**), National Institute on Disability and Rehabilitation Research (**NIDRR**).

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COMBI's First Year Online and On-Target



There are an average of 50-75 daily visits to the COMBI website <www.tbims.org/combi>

Introduction

The Center for Outcome Measurement in Brain Injury (COMBI) is a resource center available for those who need information on brain injury outcome and assessment scales. Funded by the National Institute on Disability and Rehabilitation Research (NIDRR), the COMBI project is a collaborative venture of eight model system centers that specialize in brain injury. These centers contribute the information available on the web site. The COMBI was established and placed on the Internet in 1998. Information on the COMBI is easily accessible and available free of charge.

The COMBI is located at
<<http://www.tbims.org/combi>>

Components

Materials available on COMBI-covered scales includes background materials, rating scales and forms, syllabi or administration guidelines, training and testing materials, information on scale properties, references and frequently asked questions.

Rating forms are available for download in Portable Document Format (PDF). PDF files are viewable and printable across many computer platforms. Training and testing exercises can be completed online.

Also available on the website is a bulletin board for posting questions or comments and an online survey designed to collect information on scale usage and interest.

Current Scales on the COMBI: HOW MANY DO YOU USE?

Agitated Behavior Scale (ABS)

The ABS was developed to assess the nature and extent of agitation.

Community Integration Questionnaire (CIQ)

The CIQ is a brief, reliable measure of an individual's level of integration into the home and community.

Disability Rating Scale (DRS)

The DRS is useful to measure general functional changes over time.

Functional Assessment Measure (FAM)

The FAM is an adjunct to the Functional Independence Measure (FIM) that focuses on cognitive, behavioral, communication, and community functioning measures.

Functional Independence Measure (FIM™)

The FIM is the most widely used functional assessment measure in medical rehabilitation. The FIM is an 18-item ordinal scale that can be used with all diagnoses within a rehabilitation population.

Glasgow Outcome Scale (GOS)

The GOS is a brief, descriptive scale that describes outcome as one of five categories.

The Rancho Level of Cognitive Functioning Scale (LCFS)

The LCFS assesses cognitive functioning as one of eight categories.

Mayo Portland Adaptability Inventory (MPAI)

The MPAI provides ratings of emotions, behavior, functional abilities, and physical disabilities specific to persons with brain injury.

Neurobehavioral Functioning Inventory (NFI)

The NFI was designed to collect information on a wide spectrum of behaviors and symptoms commonly associated with brain injury.

To find out more about any of these scales visit the COMBI website!

An updated list of current scales can always be found on the COMBI website at: www.tbims.org/combi/list.html.

The Patient Competency Rating Scale (PCRS)

The PCRS evaluates self-awareness (the ability to appraise one's current strengths and weaknesses) following traumatic brain injury.

Supervision Rating Scale (SRS)

The SRS measures the level of supervision that a subject receives from caregivers. ☑

ENQUIRING MINDS WANT TO KNOW...

THE COMBI'S FREQUENTLY ASKED QUESTIONS

1 What COMBI scales are people most interested in?

The COMBI, like other Internet sites, collects informational logs so we can see which areas are getting the most traffic. Currently the most "popular" scales in the COMBI are the FAM, the DRS, and the FIM. See the figure below.

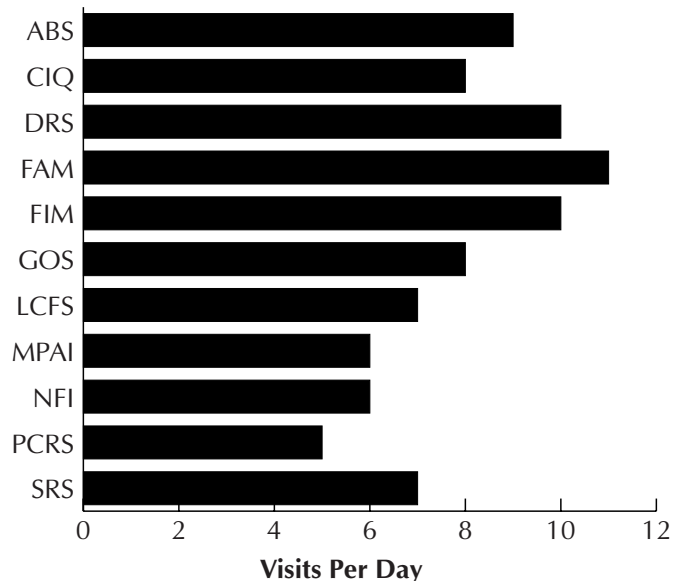
2 Who uses the COMBI?

Our online survey results show that the top professions using the COMBI are psychologists, physical therapists, and occupational therapists. Log reports show that 80% of COMBI users are within the United States, while others come from Canada (4%), United Kingdom (4%), Denmark (2%) and Australia (2%).

3 How do I suggest a new scale for the COMBI?

Email us at <combi@tbims.org>. When suggesting a new scale, please give as much information about the scale as possible (references, contacts, etc.). Through our online survey one respondent requested the Supervision Rating Scale and now it is available on the COMBI. We will let you know if and when the scale can be added to our list!

COMBI Visits by Scale



COMBI's Online Survey Findings

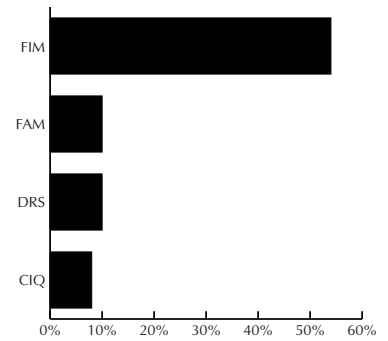
HOW DO YOU RATE?

The COMBI has been collecting responses to our online survey. The survey was set up to find out who was using the COMBI, what sort of facilities/organizations they worked for, which outcome measures they used, and what they used them for. We also asked questions on what scales respondents felt were useful, and which were considered inadequate. Fifty respondents completed the survey during the COMBI's first year. In some instances multiple responses to a question could be appropriate, so totals may be greater than 100%. Selected findings follow:

Which outcome measures does your facility use?

By far the most popular scale is the FIM (used by 54% of the respondents). Other scales used by more than 1 respondent included the FAM (10%), DRS (10%), and CIQ (8%).

What outcome scales are used?

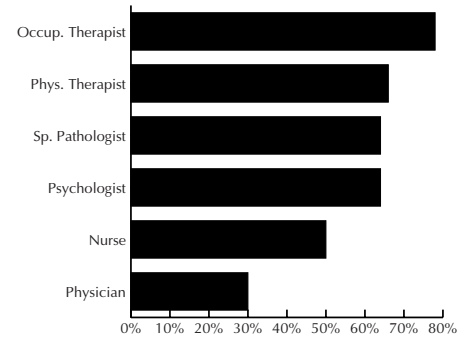


What time periods are rated?

- Admission (90%)
- Discharge (86%)
- Community F/U (30%)

One of the more interesting findings was that three of the four top scales were also rated by others as being inadequate.

Who rates outcome scales?



Which scales are most useful (top answers)?

- DRS (8%)
- FIM (8%)
- FAM (8%)
- CIQ (4%)

What do these scales do well?

- They are complete
- They are standardized
- Sensitive to cognitive deficits

Which are inadequate (top answers)?

- FIM (24%)
- FAM (6%)
- CIQ (4%)

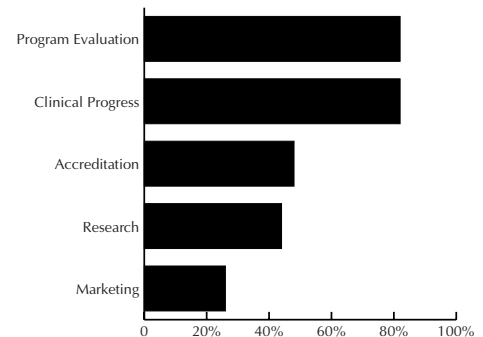
What are issues with these scales?

- Ceiling effects/ Sensitivity
- Weak in cognitive areas
- Not responsive to change
- Not reliable

Which scales should be added to the COMBI?

- SF36
- SRS (added!)
- A Quality of Life measure
- A Vocational Measure
- An Addiction Measure

What are outcome scales used for?



MORE COMBI FREQUENTLY ASKED QUESTIONS

4 Some measures are proprietary. Do I have to pay to use them?

Many of the measures featured in the COMBI are in the public domain. Some, however, are owned by organizations, and to use those measures you must purchase them or subscribe to their service. The FIM and the NFI are proprietary measures. Visit the COMBI site for more information <www.tbims.org/combi>.

5 What is the National Institute on Disability and Rehabilitation Research?

The National Institute on Disability and Rehabilitation Research (NIDRR) is a branch of the U.S. Department of Education. They are the lead Federal research-granting agency interested in the care, treatment, rehabilitation, and community integration of persons with severe disabilities. Visit their website at <www.ed.gov/offices/OSERS/NIDRR>

THANKS!

We'd like to thank all of the participants of our online survey. The questions will be changing soon, so don't forget to check back and give us your input!

The online COMBI survey is at: <www.tbims.org/combi/survey.html>.

Future Directions

The COMBI will continue to add new measures and act as a resource for the rehabilitation community. Additional instruments include the American Brain Injury Consortium (ABIC) GOS, the Satisfaction With Life Scale (SWLS), and the Craig Handicap Assessment and Reporting Technique (CHART).

The COMBI was recently cited in Coughlin KM, ed. *2000 Post-Acute Outcomes Sourcebook: A Guide to Methods, Measures and Strategies in Post-Acute Care*. New York: Faulkner & Gray, 1999.

An article describing the COMBI is being submitted to the Journal of Head Trauma Rehabilitation.

Please email us at <combi@tbims.org> with your thoughts and suggestions. Let us know how we measure up! ☑

Outcome Oriented is a project of the Center for Outcome Measurement in Brain Injury (COMBI) which is funded by the U.S. Department of Education, Office of Special Education and Rehabilitative Services (OSERS), National Institute on Disability and Rehabilitation Research (NIDRR).

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This document is available online at:

<www.tbims.org/combi/combinews.html>

Study: COMPARISONS AMONG FUNCTIONAL OUTCOME MEASURES FOR TRAUMATIC BRAIN INJURY ASSESSMENT IN THE COMMUNITY

Forty-eight U.S. and forty Italian adult individuals with prior moderate to severe TBI had a battery of ten outcome measures completed at an average of four to five years post injury.

The outcome measures included the Community Integration Questionnaire (CIQ), Neurobehavioral Functioning Inventory (NFI), Patient Competency Rating Scale (PCRS), Level of Cognitive Functioning Scale (LCFS), Functional Independence Measure (FIM), Functional Assessment Measure (FAM), Supervision Rating Scale (SRS), Disability Rating Scale (DRS), Revised Craig Handicap Assessment and Reporting Technique (R-CHART), and Glasgow Outcome Scale (GOS). Assessments were completed primarily by phone interview.

The study objectives were to: 1) Compare TBI outcomes between U.S. and Italian rehabilitation programs; 2) Describe characteristics of commonly used outcome measures; 3) Compare the statistical and clinical characteristics across measures, especially sensitivity to different aspects of outcome.

Results. The Italian cohort was significantly younger, more severely injured, had rehabilitation later, and stayed longer. By four+ years post injury they had comparable or better outcomes than the U.S. cohort. Factor analysis of the outcome scales showed some high intercorrelations and common factors and highlighted redundancies across scales. Ceiling effects were substantial in some measures, but also reflected functional independence years after injury.

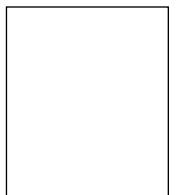
Conclusions. Outcomes were comparable between cohorts, even with more seriously injured Italians. Their younger age or longer rehabilitation may have countered the injury severity. Measures with the least ceiling effects were the R-CHART and NFI. Those with the most were the FIM, FAM, LCFS and SRS. Correlations and factor analysis revealed substantial redundancies across measures.

This study was completed by Santa Clara Valley Medical Center and is currently submitted for publication. ☑



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