An AmpEBR Update:
REHABILITATION OUTCOME MEASUREMENT

A. Barry Deathe, BSc, MD, FRCP(C)
Professor Emeritus, Dep’t. PM&R, UWO

Jackie Hebert, MD, FRCP(C)
Associate Professor, Division of PM&R, UofA, Edmonton, AB
Glenrose Rehabilitation Hospital

Dalton L. Wolfe, PhD
Lawson Health Research Institute, London, ON

Mike Devlin, MD, FRCP(C)
Division of Physiatry, University of Toronto, Toronto, ON

William Miller, PhD OT
School of Rehabilitation Sciences, UBC, Vancouver, BC
Workshop Objectives

1. To appreciate the range of available outcome measurement tools for amputation rehabilitation in the context of the ICF

2. To understand considerations when selecting specific tools
   - Metric and clinimetric properties

3. To define next steps for obtaining national consensus on outcome measurement.
AMPEBR UPDATE: Outcome Measurement

- OUTLINE -

- Objectives, Methods, Current status
- AMP EBR – consensus, criteria and standards (Barry Death)
- ICF: Body Structure/Fn Measures (Jackie Hebert)
- ICF: Activity Measures (Barry Death)
- SIGAM mobility grades
- Guidelines and Gaps: Using ATS statement on 6 MWT as an example
AmpEBR – Overall Objectives

1. Outcome Measurement Tools
   - A guide for the clinician for selection of appropriate outcome tools.

2. Review of Rehabilitation Practice and Patient Outcomes
   - A guide for the evaluation and development of programs and services.
   - A vehicle for setting the research agenda.
Outcome Measurement Tools - Methods

Step 1: Search for references and do initial title search.

Step 1a: Hand search review articles and key journals for articles to be abstracted.

Step 2: Obtain abstracts and review to determine which articles need a full review.

Step 3: Place abstracts in preliminary categories (by tool).

More specific searches may identify more articles.

Step 4: Pull articles selected for full review &
   a) Extract psychometric data (validity, reliability, responsiveness)
   b) Determine list of outcome measurement tools.

Step 5: Categorize outcome measurement tools by ICF and create overall summary tables for each tool.

Step 6: Tables are used to derive summary findings and recommendations.

Step 7: Text is built around the tables and the summary findings.
## AmpEBR - Chapters

<table>
<thead>
<tr>
<th>Main Chapters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome Tools Psychometrics</td>
</tr>
<tr>
<td>Rehabilitation Treatment</td>
</tr>
<tr>
<td>Knowledge Transfer</td>
</tr>
<tr>
<td>Rehabilitation Outcomes</td>
</tr>
<tr>
<td>Psychological Issues &amp; Status</td>
</tr>
<tr>
<td>Prosthetic Analysis</td>
</tr>
<tr>
<td>Quality of Life</td>
</tr>
<tr>
<td>Exercise &amp; Fitness</td>
</tr>
<tr>
<td>Epidemiology</td>
</tr>
<tr>
<td>Sport &amp; Recreation</td>
</tr>
<tr>
<td>Amputation - Prevention</td>
</tr>
<tr>
<td>Pediatrics</td>
</tr>
<tr>
<td>Amputation - Surgery</td>
</tr>
<tr>
<td>Upper Limb Amputation</td>
</tr>
<tr>
<td>Amputation - Wound Healing</td>
</tr>
<tr>
<td>Vocational Rehabilitation</td>
</tr>
<tr>
<td>Amputation - Complications</td>
</tr>
<tr>
<td>Amputation - Pain</td>
</tr>
</tbody>
</table>
Outcome Measurement Tools –
Current Status

1. Outcome Measurement Tools Classified as Body Structure/Fn (ICF)

2. Outcome Measurement Tools Classified as Activity (ICF)

3. Tools to Assess Psychological Adjustment to Lower Limb Amputation
No Consensus on Outcomes or Outcome Instruments

**Conclusion:** A diverse selection of program- and patient related outcome measures were used by Canadian amputee centers. Outcomes could be better compared if all centers used similar outcome measures.
Factors in the Process to Achieve Consensus

1. Clinical Sensibility
   a) Clarify purpose for which data will be used
   b) Agree on the classification of health status
   c) Clarify context
      • ICF modifiers
         – Personal
         – Environmental

2. Instrument metrics
   a) Stability
   b) Validity
   c) Responsiveness
Evaluation Criteria: Health Technology Assessment (HTA)

1. Appropriateness
2. Reliability
3. Validity
4. Responsiveness
5. Precision
6. Interpretability
7. Acceptability
8. Feasibility

### Criteria for Overall Metric Findings of a Specific Instrument

(Adapted from Johnson & Graves 2008)

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extensively validated and widely used</td>
<td>++++</td>
</tr>
<tr>
<td>Content and metric reliability and validity shown</td>
<td>+++</td>
</tr>
<tr>
<td>Minimal validity</td>
<td>++</td>
</tr>
<tr>
<td>Questionable or insufficient</td>
<td>+</td>
</tr>
<tr>
<td>No formal validity/reliability information published</td>
<td>o</td>
</tr>
</tbody>
</table>
Goal – Primary Objective

A guide for the clinician to select the most appropriate outcome instrument
AmpEBR – Outcome Measure Selection

- 49 Individual Outcome Measures Extracted
- Classified according to domain that majority of items fit into
- Only those outcome measures that had been specifically studied in LL amputees
- Only those with reported psychometrics (reliability, validity, responsiveness)
International Classification of Functioning, Disability and Health (ICF) – Components, Modifiers and Interactions

Health condition
(disorder or disease)

Body Functions and Structures

Activities

Participation

Environmental Factors

Personal Factors
**Physiological functions** of body systems including psychological.

**Structures** are anatomical parts or regions of their bodies and their components.

**Impairments** are problems in body function or structure.
Activity

- The execution of a task by an individual.
- **Limitations in activity** are defined as difficulty an individual might experience in completing a given activity.
Participation

- Involvement of an individual in a life situation.
- Restrictions to participation describe difficulties experienced by the individual in a life situation or role.
Results: Body Function

- Systematic review: any instruments with reported reliability, validity, or responsiveness in lower limb amputation
- 16 instruments identified
- Classified into one of 4 subcategories of the ICF Body Function category
Body Function - Subcategories

1. Mental functions
2. Sensory functions and pain
3. Functions of the cardiovascular, haematological, immunological and respiratory systems
4. Neuromusculoskeletal and movement-related functions
1. Mental Function (12 scales)

- Activity-Specific Balance Confidence Scale (ABC)
- Attitudes to Artificial Limbs Questionnaire (AALQ) [1]
- Body Image Questionnaire (BIQ) [1]
- Amputee Body Image Scale (ABIS) [3]
- Engagement in everyday activities involving revealing the body (EEARB) [1]
- Amputation-Related Body Image Scale (ARBIS) [1]
- Multidimensional Body-Self Relations Questionnaire (MBSRQ)
- Beck Depression Inventory (BDI) [3]
- Center for Epidemiological Studies - Depression Scale (CES-D) [5]
- General Health Questionnaire (GHQ-28) [3]
- Geriatric Depression Survey (GDS) [2]
- Hospital Anxiety and Depression Scale (HADS) [3]
Grouping of Mental Function Scales

- **Balance confidence**
  - ABC scale

- **Body image**
  - AALQ, BIQ, ABIS, EEABR, D-EEABR, ARBIS, MBSRQ

- **Depression/emotional status**
  - BDI, CES-D, GDS, HADS, GHQ
2. SENSORY FUNCTION AND PAIN
   - Socket Comfort Score (SCS) [1]

3. CARDIOVASCULAR AND RESPIRATORY
   - One leg cycling test (VO2 max, AT) [3]

4. NEUROMUSCULOSKELETAL AND MOVEMENT
   - Walking speed [1]
   - Postural sway [3]
Results: Mental Function

- **Balance**
  - **ABC** (Activities Balance Confidence)
    - Self rating of fear of falling during day to day activities; use in outpatients
    - Easy to administer
    - Excellent validity and reliability
    - Correlates with social participation
  - **CLINICAL**: Recommended for use to assess outcomes and as a proxy for participation
  - **RESEARCH**: Needs evaluation of responsiveness
Results: Mental Function

- Body Image Scales:
  - **ABIS**: (Amputee Body Image Scale)
    - Most psychometric testing
    - Self perception of body image (feelings)
    - Correlates with other measures of psychological well being
    - Excellent validity
  - **RESEARCH**: more study on reliability and responsiveness
  - **CLINICAL**: good potential for clinical use
Results: Mental Function

- Depression/Emotional Status
  - CES-D (Center for Epidemiological Studies - Depression Scale)
    - Validity well demonstrated; may over report depressive symptoms (some questions related to physical effort)
  - GHQ-28 (General Health Questionnaire)
    - good sensitivity and specificity
    - Recommended for use for screening for depression
Results: Sensory and Pain

- **Socket Comfort Score (SCS)**
  - Perceived comfort in a prosthetic socket (numerical rating)
  - Excellent reliability
  - Some responsiveness to prosthetic intervention
  - Easy to use and implement
  - **CLINICAL**: Very specific purpose
Results: Cardio-Resp Function

- One leg cycling ergometry
  - Measure AT and VO2 max
  - Need specialized equipment and trained personnel
  - RESEARCH applications (exercise capacity major factor with rehabilitation)
  - CLINICAL: Potential use as a predictor tool or to define exercise capacity
Results: NM and movement

- **Walking speed**
  - Instrumented motion analysis
  - Equipment may affect results
  - Other walking tests reviewed under “Activity”

- **Postural Sway**
  - Dynamic balance assessment tools
  - Limited access (equipment and trained personnel)
## Summary of Results – Metric Properties

<table>
<thead>
<tr>
<th>Clinical Category</th>
<th>Instrument</th>
<th>Author / Year</th>
<th>Reliability</th>
<th>Validity</th>
<th>Responsiveness</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>IC Intra Inter Conv Conc Pred Ceiling Effect Floor Effect Resp Effect Overall</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SENSORY &amp; PAIN</td>
<td>Socket Comfort Score</td>
<td>Hansпал / 2003</td>
<td>+++ ++</td>
<td></td>
<td></td>
<td>++</td>
</tr>
<tr>
<td>CARDIO-VASCULAR &amp; RESPIRATORY</td>
<td>One Leg Cycling Test</td>
<td>Chin / 2002</td>
<td>+++ ++</td>
<td></td>
<td></td>
<td>++</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chin / 1997</td>
<td>+++ +++</td>
<td></td>
<td></td>
<td>+</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Currie / 1992</td>
<td>+++</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NMS &amp; MOVEMENT</td>
<td>Walking Speed</td>
<td>Boonstra / 1993</td>
<td>+++ ++</td>
<td></td>
<td></td>
<td>++</td>
</tr>
<tr>
<td></td>
<td>Postural Sway</td>
<td>Buckley / 2002</td>
<td>+++</td>
<td></td>
<td></td>
<td>+</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hermodsson / 1994</td>
<td>++</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Isakov / 1992</td>
<td>++</td>
<td></td>
<td></td>
<td>+</td>
</tr>
</tbody>
</table>

- IC = Internal Consistency
- Intra = Intra-rater Reliability
- Inter = Inter-rater or Test-retest Reliability
- Conv = Convergent Validity
- Conc = Concurrent Validity
- Pred = Predictive Validity
- Resp = Responsiveness
Adequate Psychometrics:
- ABC (balance confidence)
- ABIS (body image)
- Depression Screen (GHS/CESD)
- SCS (socket comfort score)

More study on responsiveness needed for all measures
ICF: Activity

- The execution of a task by an individual.
- **Limitations in activity** are defined as difficulty an individual might experience in completing a given activity.
Clinical Classification of ICF Activity
Outcome Instruments

A. Walk Tests
   1. Fixed Distance
      i. Timed Up and Go (TUG)
      ii. ‘L’ Test
      iii. 10 Metre Walk
   2. Fixed Time
      i. 2 Minute Walk Test

B. Mobility Grades
   1. SIGAM
C. Indices (summary scores)

1. Generic
   i. ADLs
      a. Barthel Index
      b. Functional Independence Measure (FIM)
   ii. Mobility
      a. Clinical Outcome Variables Scale (COVS)
      b. Rivermead Mobility Index (RMI)
      c. Wheelchair Skills Test (WST)

2. Amputation Specific
   i. Day’s Amputee Activity Score (AAS)
   ii. Houghton Score
   iii. Locomotor Index (LCI)
   iv. Prosthetic Evaluation Questionnaire – Mobility Scale (PEQ-MS)
   v. Questionnaire for Persons with a Transfemoral Amputation (Q-TFA)
   vi. Child Amputee Prosthetic Project-Functional Status Inventory (CAPP-FSI)
   vii. Amputee Mobility Predictor (AMP)
## Results - TUG Test Summary

<table>
<thead>
<tr>
<th>Clinical Category</th>
<th>Instrument Author / Year</th>
<th>Setting</th>
<th>Etiology</th>
<th>Level</th>
<th>n</th>
<th>Type of Data</th>
<th># of Items</th>
<th>Item Response Range</th>
<th>Number of Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Walk Tests</strong></td>
<td><strong>TUG</strong></td>
<td>OP</td>
<td>Vasc/Traum</td>
<td>TF-TT</td>
<td>93</td>
<td>Ratio</td>
<td>1</td>
<td>0 - ∞</td>
<td>1</td>
</tr>
<tr>
<td>(Fixed Distance)</td>
<td>Deathe / 2005[33]</td>
<td>OP</td>
<td>Vasc/Traum</td>
<td>TF-TT</td>
<td>84</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Miller / 2004[87]</td>
<td>OP</td>
<td>Vasc/Traum</td>
<td>TF-TT</td>
<td>50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Miller / 2003[88]</td>
<td>OP</td>
<td>Vasc/Traum</td>
<td>TF-TT</td>
<td>55+</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Miller / 2001[62]</td>
<td>OP</td>
<td>Vasc/Other</td>
<td>TF-TT</td>
<td>329</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Results – Metric Properties of TUG Test

<table>
<thead>
<tr>
<th>Clinical Category</th>
<th>Instrument Author / Year</th>
<th>Reliability</th>
<th>Validity</th>
<th>Responsiveness</th>
<th>Overall Metric Findings</th>
</tr>
</thead>
</table>

**IC** = Internal Consistency  
**Intra** = Intra-rater Reliability  
**Inter** = Inter-rater or Test-retest Reliability  
**Conv** = Convergent Validity  
**Conc** = Concurrent Validity  
**Pred** = Predictive Validity  
**Resp** = Responsiveness
# Guide to Selection of Activity Outcome Instruments for LEA

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Health Status</td>
<td>Change in Health Status</td>
<td>Capacity (Can Do)</td>
<td>Perform (Does Do)</td>
<td>Fit</td>
<td>Frail</td>
<td>Clinic</td>
<td>Mode of Admin</td>
</tr>
<tr>
<td>Walk Tests</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fixed Distance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TUG</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Observational</td>
</tr>
<tr>
<td>L-Test</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 m</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fixed Time</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 minute</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td>Observational</td>
</tr>
<tr>
<td>Mobility Grades</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SIGAM</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Questionnaire</td>
</tr>
<tr>
<td>Indices (Summary)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generic – ADL’s</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FIM</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Interview</td>
</tr>
<tr>
<td>Generic – Mobility</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COVS</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>Observational</td>
</tr>
<tr>
<td>RMI</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Observational</td>
</tr>
<tr>
<td>WST</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>Observ. / Self report</td>
</tr>
<tr>
<td>Amputee Specific</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AAS</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Interview</td>
</tr>
<tr>
<td>Houghton</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Questionnaire</td>
</tr>
<tr>
<td>LCI-5</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Questionnaire</td>
</tr>
<tr>
<td>PEQ-MS</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Questionnaire</td>
</tr>
<tr>
<td>Q-TFA</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>Questionnaire</td>
</tr>
<tr>
<td>AMP</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Observation</td>
</tr>
<tr>
<td>CAPP</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Proxy report</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The SIGAM mobility grades: a new population-specific measure for lower limb amputees

N. H. RYALL†*, S. B. EYRES‡, V. C. NEUMANN†, B. B. BHAKTA‡ and A. TENNANT‡

† Prosthetics Department, Chapel Allerton Hospital, Chapeltown Road, Leeds, UK
‡ Rheumatology and Rehabilitation Research Unit, Clarendon Road, Leeds, UK
Hoffer Criteria for any classification/categorical scheme

- self explanatory
- made sense and had meaning to: a) patients, b) health care professionals, c) society
- natural hierarchy of mutually exclusive categories
SIGAM Development

Harold Wood-Stanmore

1. Cosmetic
2. Therapeutic
3. Indoor
4. Outdoor with walking aids
5. Independent
6. Normal
Modified HWS=SIGAM

- observer based to self report questionnaire
- benchmark distance of 50 meters
- algorithm for questionnaire inconsistencies
SIGAM Psychometrics

- Gardiner 2002 - inter-observer reliability [multi centre studies]
- Ryall 2003 - reliability validity responsiveness
- Rommers 2008 - inter-observer reliability (rollator walker added)
- Viosca 2005 - compares within stroke population - 3 category classification vs the 6 category instrument
SIGAM Mobility Grades

A. Limb wearing or use of cosmetic limb only
B. Therapeutic wearer wears the prosthesis only for transfers, to assist nursing, walking with the physical aid of another during therapy.
C. Walks on level ground only <, 50 meters, with or without the use of walking aids: a = frame, b = crutches/sticks, c = crutch/stick
D. Walks on level ground only and in good weather, more than 50 meters, with or without the use of walking aids: a = frame, b = crutches/sticks, c = crutch/stick
E. Walks more than 50 meters. Independent walking aids except occasionally for confidence or to improve confidence in adverse terrain or weather.
F. Normal or near normal gait.

Refer to Rydall [2003] for the algorithm and self-report questionnaire.
Guidelines and Gaps Using ATS Statement as an Example – (Crapo 2002)

- Purpose and Scope
- Background
- Indications and Limitations
- Contraindications
- Safety Issues
- Technical Aspects of 6 MWT
- Required Equipment
- Patient Preparation
- Measurement Protocol
- Quality Assurance
- Interpretation
- References
6 MWT Reproducibility (Stability)

- Sources of variability
- Guyatt 1984 Encouragement significantly increases distance walked
- Guyatt 1985: Coefficient of variation 0.05 (WPSD = 22.5m)
  - CV = WPSD 1 SD 65x
  - Mean 2 SD 95x
- Weiss 2000: 470 patients with severe COPD but highly motivated
  - 2nd day test 66 feet (20m) = 5.8% higher
- Kervio 2003: measurement error in healthy elderly in community
  - 20m
- Lin 2008: 3 within day trials in transtibial amputees (N=13)
  - learning effect \( \rightarrow T_1=545m, T_2=554m, T_3=570m \)
  - \( T_3-T_1 = 25m \) difference = 4.6% higher in 3rd trial
6 MWT Interpretation

- Single Measurements of Functional Status
  - Gibbons 2001 reference equation
    Predicted distance (m) = 868 M – [age x 2.9] – [female x 74.1]

- Community Requirements?
  - Menard-Rothe 1997
    Ability to walk ≥ 332m at 80m/min

- Expression of Change
  - Absolute Value % Change Δ in the % of predicted value

- Clinically Meaningful Change
  - Guyatt 1984, 1985, 1987 30-60m [15-18%]
  - Redelmeira and Guyatt 1997
    Stable severe COPD population
    MCID (perception) = 54m [95% CI : 37-51m]
CONCLUSIONS – Related to Workshop Objectives

1. Considerations for Outcome Measurement Tool Selection
   • Purpose for which data will be used
   • Classification Scheme (ICF)
   • Context
     • Personal and Environmental
   • Metrics and Pragmatics

2. Achieving Consensus
   • Review Literature
   • Convene Consensus Group
   • Use ATS statement as template
Handouts

• Body Function
  • List of OMs and Results from BF&S paper

• Activity
  • Table VI ICF activities paper
  • SIGAM Classification System, Questionnaire, Algorithm (Ryall et al. 2003)
  • ATS statement article
  • Test instructions per Parkwood Hospital with respect to walk tests