Use of the International Classification of Functioning and Disability to Develop Evidence-Based Practice Guidelines for Treatment of Common Musculoskeletal Conditions
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In 2006, the Orthopaedic Section began a project to use the International Classification of Functioning and Disability (ICF) to develop evidence-based practice guidelines that will enhance diagnosis, intervention, prognosis, and assessment of outcomes for a variety of musculoskeletal conditions commonly managed by physical therapists. The ICF is a new model of disablement that was developed by the World Health Organization in 2001. In the ICF model, functioning and disability are classified in terms of body structure and function as well as in terms of activity and participation of the individual. The ICF model will be used to classify common musculoskeletal conditions, such as adhesive capsulitis, acute low back pain, patellofemoral pain and ankle sprains, in terms of impairment of body structure and function, activity limitations, and participation restrictions. These ICF classifications will be used to develop evidence-based guidelines for diagnosis, intervention, prognosis, and assessment of outcome. It is believed that these guidelines will advance orthopaedic physical therapist practice and could be used to guide professional and postprofessional education and to establish an agenda for future clinical research.

To begin this process, workgroups were established for 7 body regions including the:
- Foot and ankle
- Knee
- Hip
- Lumbosacral spine
- Cervicothoracic spine
- Shoulder
- Elbow, wrist, and hand

Each work group will consist of a leader and 4 to 6 members who have expertise in managing conditions involving that body region. Initially the workgroup identified 2 to 4 musculoskeletal
conditions that affect the region that are commonly treated by physical therapists. For example, common musculoskeletal conditions identified by the Foot and Ankle Workgroup include plantar fasciitis and ankle sprains. The Hip Workgroup has identified the hip fractures, labral tears, osteoarthritis, and total hip replacement and the Shoulder Workgroup has identified adhesive capsulitis and impingement/rotator cuff disease as common conditions managed by physical therapists.

Next, for each condition, the workgroup will identify the impairments in body structure and function, activity limitations, and participation restrictions that are linked to the ICF classification system. For example, the impairments in body structure and function, activity limitations, and participation restrictions that can be used to classify patients with adhesive capsulitis are shown in Table 1. The impairments, activity limitations, and participation restrictions will be used to classify individuals into treatment categories and also can be used to establish prognosis and measure outcome. Measurement methods for identifying these impairments, activity limitations and participation restrictions, including the measurement properties for each measure, will be described.

The next step will be to describe a system to classify individuals into homogeneous subsets, which will best respond to specific interventions. To accomplish this, measures of impairment, activity limitations, and participation restrictions that can be used to classify individuals into homogeneous subsets that will best respond to specific interventions will be described. References to peer-reviewed evidence to support this classification system will be provided. If no peer-reviewed evidence exists, the workgroup will use their collective clinical expertise to describe a first approximation of the classification system, which can then be the subject of further investigation. The classification system will also consider ‘red flags’ to
identify patients that are either inappropriate for physical therapy or for whom physical therapy is appropriate but would benefit from consultation with another health care provider.

Once the classification system has been developed, the next step will be to describe interventions and the supporting evidence for specific subsets of patients based upon the classification system. The interventions will typically focus on impairments that define the specific classifications. The focus will be on interventions provided by physical therapists, however as appropriate, the guidelines will also include adjunctive procedures and/or pharmacological considerations. For example, based on existing evidence (for example, Carette et al 2003) the guidelines for management of adhesive capsulitis should address considerations for intra-articular injection of corticosteroids.

In summarizing the evidence to support specific interventions, consideration will be given to the strength of evidence. Greater emphasis will be given to clinical research involving patients. If clinical evidence is lacking, evidence to support the biomechanical or biological plausibility of the intervention will be provided. Specific recommendations for patient education will be included in the description of interventions. For postoperative conditions, modifications to the impairment based classification and treatment system based upon surgical procedure and expected time course for healing will be considered.

The final step will be to disseminate the guidelines for review and use. To facilitate use, flow diagrams and algorithms that summarize the classification and clinical decision making processes will be created. Tools to support use of the guidelines, including data collection forms, recommendations for evaluation of patient outcomes, and patient education materials, will be created. Manuscripts describing the evidence-based guidelines for management of common musculoskeletal conditions will be written and submitted for publication.
This project is a work in progress. A summary of the project and progress to date, including presentation of the first evidence-based guidelines for management of common conditions affecting the foot and ankle, hip and cervicothoracic spine, was presented at the Combined Sections Meeting in San Diego on February 15, 2007. Click here: http://www.orthopt.org/ICF.php to view the project introduction and the session presentations.

For more information concerning the project, please contact Joe Godges or Jay Irrgang through the Orthopaedic Section Office at 1-800-444-3982 or via our e-mail addresses that are provided on our Section’s website: http://www.orthopt.org/officerdirectory.php.

REFERENCE

### Table 1. ICF Classification of Impairments, Activity Limitations, and Participation Restrictions for Adhesive Capsulitis of the Shoulder

#### Body Structures Related to Adhesive Capsulitis of the Shoulder
- Joints of shoulder region (s7200)
- Ligaments and fasciae of shoulder region (s7204)
- Muscles of shoulder region (s7203)

#### Body Functions Related to Adhesive Capsulitis of the Shoulder
- Pain in joints (b28016)
- Pain in upper limb (b28014)
- Mobility of single joint (b7100)
- Mobility of several joints (b7101)
- Mobility of scapula (b7200)
- Power of isolated muscles and muscle groups (b7300)
- Endurance of isolated muscles (b7401)
- Endurance of muscle groups (b7401)
- Control of simple voluntary movements (b7600)
- Control of complex voluntary movements (b7601)
- Coordination of voluntary movements (b7602)

#### Activity and Participation Related to Adhesive Capsulitis
- Lifting and carrying objects (d430)
  - Lifting (d4300)
  - Carrying in hands (d4301)
  - Carrying in arms (d4302)
  - Carrying on shoulders, hip or back (d4303)
  - Putting down objects (d4305)
- Hand and arm use (d445)
  - Pulling (d4450)
  - Pushing (d4451)
  - Reaching (d4452)
  - Turning or twisting the arms or hands (d4453)
  - Throwing (d4454)
  - Catching (d4455)
- Washing oneself (d510)
  - Washing body parts (d510)
  - Washing whole body (d511)
  - Drying oneself (d512)
- Caring for body parts (d520)
  - Caring for hair (d5202)
- Toileting
- Dressing
  - Putting on clothes (d5400)
- Taking off clothes (d5401)
- Eating (d550)
- Drinking (d560)
- Doing housework (d649)
- Caring for household objects (d650)
- Assisting others with self-care (d660)
- Acquiring, keeping and terminating a job (d845)
- Remunerative employment (d850)
- Community life (d910)
- Recreation and leisure (d920)
  - Play (d9200)
  - Sports (d9201)
  - Crafts (d9203)
  - Hobbies (d9204)
  - Socializing (d9205)