PS8

Applying the new International Guidelines for Wheelchair Posture and Seating (this is one presentation over the 2 sessions, i.e. not repeated)

Barend ter Haar

Summary
An international team has been putting together a set of Clinical Guidelines to apply the 2006 ISO standard for measuring body posture and postural support surfaces in wheelchair seating. The workshop will provide an introduction and training in the application of this standard as covered in these new Guidelines.

Aims and Objectives
Using the principles in the Clinical Application Guide to Standardized Wheelchair Seating Measures of the Body and Seating Support Surfaces, participants will be able to define terms and demonstrate measurement methodologies for: Relative Body Segment Angles; Absolute Body Segment Angles; Absolute Support Surface Angles; Linear Body Measures; Linear Support Surface Measures; Support Location Measures. Further, understanding will be provided for e.g. differences between actual and effective measures, length and height measures.

Background
The development of wheelchair seating as a sub-specialty of rehabilitation services has been occurring over the last several decades. This practice involves the selection and provision of wheelchair seating products that provide improved body support, movement control, and injury prevention for the wheelchair user. Inherent in this selection process is the measurement and communication of the postural measures of the seated person, as well as the orientation, location, and linear measures of the person's seating support surfaces. A significant impediment to further development in this field has been the existence of tremendous variation in the use of terminology related to both the postural measures of a seated individual, as well as measures of the seating support surfaces. Standard terms and definitions have been lacking for communication of critical postural information and support surface parameters in a way that is useful to therapists, suppliers, researchers, and manufacturers providing wheelchair seating devices and services. There is also a clinical need to be able to quantify the change in posture of an individual which occurs after seating technology intervention, or which may occur over an extended time during use of the device. This needs to be done in a way that is consistent and reproducible with time, and by techniques that are commonly used in different clinics so that the information gathered is transferable in an unambiguous fashion.
To address the need for standardized terms and measures in the field of wheelchair seating, in 1998 an ISO task group of experienced clinicians and engineers initiated a collaborative work effort to develop terminology standards related to measures of the seated person and their seating supports. After eight years 'ISO16840-1:2006 Wheelchair seating -- Part 1: Vocabulary, reference axis convention and measures for body segments, posture and postural support surfaces' was published
The ISO16840-1 standard is a complex document which specifies
1. A global coordinate system for measurement
2. Standard terms and definitions for describing the posture and anthropometrics of a person seated in a wheelchair
and
3. Standard terms and definitions for describing the linear dimensions, location, and angular

orientation of seating support surfaces.
It is important to note that this standard does not prescribe a specific clinical methodology for measuring a person's seated posture or wheelchair seating system, but only defines the term used for the measure and the convention for determining the value of a measure. Additionally, it does not re-define terms for dynamic physiological movements (such as flexion or extension) which are already commonly used medical terms, but rather provides an alternative vocabulary for describing the static posture of a wheelchair seated individual more clinically useful for our field.

Discussion

Although the completion of the ISO standard was a significant achievement, there has been minimal adoption of the terms and measures included in the standard to date by practitioners. It is difficult for individual clinicians and other stakeholders to access these documents and apply this critical information into their practice because standards documents are by necessity highly technical, difficult to understand, and costly to purchase. The purpose of this clinical Guide was therefore to extract the terminology and principles contained in the ISO16840-1 standard and present them in a format and language that is easy to understand, clinically useful, and freely accessible to those who are involved in wheelchair seating evaluation, product selection and provision, and research. It is the authors' hope that this Guide will ultimately facilitate incorporation of these standardized seating terms and measures into common clinical practice, as well as promote collaborative research in the field of wheelchair seating.

Reference

ISO16840-1:2006 Wheelchair seating -- Part 1: Vocabulary, reference axis convention and measures for body segments, posture and postural support surfaces