Standards, principles and best practices of transport safety for wheelchair seated passengers

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RERC on Wheelchair Transportation Safety
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Introductory Comments

- Introductions
- Review of Agenda
- Course Hand-out Information
- Learning Objections

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Overall Learning Objectives

To achieve a basic understanding of:

- ♣ **Basic principles of occupant injury prevention,**
- ♣ **The purpose, structure and potential of Wc transportation safety standards,**
- ♣ **Awareness of specific standard's contents, implications for; users, clinicians, and manufacturers,**
- ♣ **Real-world problem-solving using standards information and related biomechanical principles,**
- ♣ **How service providers can contribute to WTS,**
- ♣ **How to locate additional resources.**

The Main Problems-1980---

- **Lack of awareness/concern of the transport safety risks to Wc users**
- **Lack of strength and durability of products**
- **Lack of useful information for users and clinicians**
- **Lack of means to bring together concerned parties to problem solve**

Q: How could an evolving solution be set in motion that would have a long term impact?

A: Through development of industry product standards and related best practice application information

Q: What is an industry standard?

Session 1

Industry Standards: Rational and the Development Process

Session 1-Learning Objectives

To gain a basic understanding of:

- ♣ **Rationale and purpose of voluntary industry standards,**
- ♣ **National vs. international standards,**
- ♣ **ISO standards development process,**
- ♣ **Anatomy of a typical ISO standard,**
- ♣ **Implications for:**
  - ◆ **W/c users**
  - ◆ **Service providers**
  - ◆ **Manufacturers**
  - ◆ **Insurers/payors**

Rational and Purpose of Industry Standards

Rationale/Purpose:

- **To promote improved product quality and safety,**
- **To provide improved product information for service providers and users,**
- **To facilitate world-wide barrier-free trade,**
- **To consolidate technical/scientific/clinical knowledge on a world wide scale.**

National vs. International Standards

- **National:(ANSI/RESNA or CSA)**
  - **Usually limited stds. development resources,**
  - **Scope limited to nationally produced products and expertise,**
  - **Can limit importation of desirable foreign products,**
  - **Shorter development time.**
- **International (ISO):**
  - **World-wide resources are integrated and focused,**
  - **Facilitates barrier-free importation,**
  - **Highly structured development and approval process,**
  - **Requires longer development time,**
  - **Agreement can result in less than ideal outcome**

Voluntary vs. Mandatory Standards

- **Voluntary(WTS stds.):**
  - **Usually developed by industry**
  - **Self regulatory, self certification**
  - **Compliance not a legal requirement**
  - **Do set the legal bar for recognized std. of industry practice**
- **Mandatory Regulations (FMVSS, ADA):**
  - **Based on an Act approved by Congress**
  - **Regulations follow intent of legislation**
  - **Non-compliance is illegal**
  - **Enforcement by government agency**

International(ISO) Stds. Development Process

Six stages of development:

1. **Preliminary Work Item (PWI)**
   - Early consolidation of ideas (informal)
2. **New Work Item (NWI)**
   - First formal stage (starts clock running)
3. **Committee Draft (CD)**
   - first draft by working committee
4. **Draft International Standard (DIS)**
5. **Final Draft International Standard (FDIS)**
6. **International Standard (IS)**

International(ISO) Stds. Development Process

Std. Approval Process:

- **Country participation- Observer or Participant,**
- **70% approval by participating countries to proceed through stages 2-5,**
- **Voting comments from national participants must be addressed by Working Group (WG).**
- **ISO gives 36 month deadline once NWI approved--most Wc stds. take 48-60 months,**
- **Once an IS, must be reviewed on 5 year cycle,**
- **IS available for purchase from ISO- http://www.iso.ch**

Anatomy of Typical ISO W/c Standard

Format of ISO Standard

- **Foreword**:ISO info. ie.what SC prepared std, etc.,
- **Introduction:** rationale for std.
- **Scope:** focus of std.,
- **Normative References:** other related std(s). that must be referred to,
- **Terms and Definitions:** definition of terms used in the std.,
- **Design Requirements:** that must be met for tested product to be in compliance,

Anatomy of Typical ISO W/c Standard-cont.

Format of ISO Standard:

- **Identification, Information, and Instruction Requirements:** what must be provided by manufacturer,
- **Performance Requirements:** how the product must perform under specified test conditions,
- **Test Report:** what information must be contained in a test report and kept on file,
- **Test Methods (often Annexes):** lab. tests used to verify that design and performance requirements have been met.
  - **Normative**- must be followed to comply with std.
  - **Informative**- for information or guidance only

Implications for W/c Users

- Improved product durability and safety over time,
- Availability of more reliable information,
- Wider selection of products (imports),
- Higher cost?

Implications for Service Providers

- Wider selection of service options
- Standardized information allows improved comparison between products
- International standard terminology defined by knowledgeable group
- Opportunity to participate in dev. process
- Improved exchange across disciplines

Implications for Manufacturers

- Higher cost to produce products?,
- Places all on 'level playing field,
- Facilitates cross-border trade,
- Opportunity to participate in process,
- Design guidelines obtained,
- Reduces product liability in some countries.

Implications for Payors

- Objective criteria for determining what products should be added to 'providers list' (test reports),
- Improved value (durability/safety) for national investment

QUESTIONS/DISCUSSION