Bridging the Gap Between Consumer and Products in Rehabilitation Medicine

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REACH
How is assistive technology used?

- Mental and / or Physical Activities of Daily Living (ADL)
  - Improve functioning
  - Overcome disorder or impairment
  - Prevent worsening of a condition
  - Strengthen a weakness
ADLs

- Self Care
  - Dressing
ADLs

- Self Care
  - Mobility
ADLs

• Self Care
  ➢ Eating and Meal Preparation
ADLs

- Self Care
  - Eating
ADLs

• Self Care
  ➢ Hygiene
ADLs

- Communication
ADLs

- Leisure
  - Hobbies, sports, travel, etc.
ADLs

• Vocation and Education
Prescribing Rehabilitation Equipment

MD → ? → End User
The Transdisciplinary Team

Physiatrist

Computer Engineer
Family / Tutor / Caregiver
Rehabilitation Counselor
Assistive Technology Specialist
Service Coordinator
Fabrication / Adaptation Tech
Training Coordinator
Audiologists
Nurse Practitioners

Social Workers
Occupational Therapist
Speech-Language Pathologist
Prosthetists
Medical Consultants
Teachers / Special Educators
AT Equipment Vendors
Hearing Device Specialists
Physical Therapists

Patient
Occupational Therapist

- Assisting people who are unable to function independently or are not functioning as independently as possible in the areas of daily living, work, play, and leisure.

- Independence is increased through functional activities that are meaningful to the individual.

- Occupational Therapists treat the whole person!
Steps Needed to Issue an Assistive Device

- Prescription from a MD
- Equipment suitability
- Site and method of instruction
- Time to introduce device during hospitalization
- Reinforcement of its use
- Written justification to insurance company
Who pays?

- User
- Insurance
- Private
- Managed care
- Fee-for-services
- Medicare
- Medicaid
- VA
- Grants / Loans
Equipment Suitability

- Social Aspects
- Personal Factors
- Health Status
- Economic Factors
- Physical Environment

Culture  Age  Chronic  Cost  Rural City
Support  Gender  Changing  Rent / Own
Motivation  Education  Acute  Stairs
Perception of Self  Diagnosis
Different Levels of Assistive Technology Require Different Amount of Training

**Low Technology Adaptation**
- Easy to use and does not require electrical power. May require a short training period.

**Elementary Technology Devices**
- Includes most battery-operated devices. User requires a moderate training period. Usually off-the-shelf or inexpensive.

**High Technology Devices**
- Includes complex and programmable equipment. User requires specific training in order for the user to take full advantage of their capabilities. Expensive
Instruction in the Use of the Assistive Device

- Repetition is key

- Types of instruction:
  - demonstration
  - practicing actual skills in hospital environment
  - written
  - video
  - in-home training
Reinforcement

- Transition of skills to community / home environment
- Follow-up
- Support groups
- Refresher training may be necessary
Assistive Technology
One Size Doesn’t Fit All

Long Handled Sponge
How this all relates to product development
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➢ Take an iterative, multi-criteria approach that considers:

  ❖ Functionality
  ❖ Acceptability
  ❖ Ease and intuitiveness of use
  ❖ Accessibility
  ❖ Performance
  ❖ Robust Design
  ❖ Safety
How this all relates to product development

- Involve all stakeholders early on and throughout the design process:
  - End users
  - Rehab team / therapist
  - Family members
Which of the following assistive technologies do our panelists use?

Rules of the interview:
- Explore social aspects, personal factors, economic and physical environments of the panelists
- Find out what motivates these panelists
- You may not ask directly if they use the AT in question or not
Example of a Low Tech Device: Rocker Knife

$8.95

$26.50
Example of an Elementary & High Tech Device: Saebostretch & Saeboflex

$349

$1690
Example of a High Tech Device:
Bioness Hand FES

$6200
Example of a High Tech Device: Bioness Hand FES

Other Resources

Website Links

Abledata
http://www.abledata.com/

North Coast Medical
http://www.ncmedical.com/

Sunrise Medical
http://www.sunrisemedical.com/

Alimed
http://www.alimed.com/