Bridging the Gap between Consumers and Products in Rehabilitation Medicine

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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
  - Mobility
ADLs

- Self Care
  - Dressing
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
- Psychologist

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

Patient
Assistive Technology: One Size Doesn't Fit All

Long Handled Sponge

Total Hip Replacement - precautions

At 2 months, 30% of patients aren’t using the device.
Steps to Successfully Issue an Assistive Device

- Home and patient evaluation
- Introduction of device
- Site and method of instruction / training
- Written justification to insurance company
Steps to Successfully Issue an Assistive Device

Home and Patient evaluation:

- Health Status
- Economic
- Physical Environment
- Social Aspects
- Personal
Whenever possible, keep it simple.
Different Levels of Assistive Technology Require Different Amounts 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.
How this all Relates to Product Development

- Involve all stakeholders early on and throughout the design process:
  - End users
  - Rehab team / therapist
  - Family members
Website Links

- Allegro Medical
- Abledata
- North Coast Medical
- Sunrise Medical
Where to donate used medical equipment

- ReCARES
- Lions Club – Hearing Aid Recycling Program
- Silicon Valley Independent Living Center (wheelchairs <5 years old)
- Centers for Independence of Individuals with Disabilities
- Ability Tools – Reuse Programs
Disability ≠ Inability
Practicing Subject and Caregiver Interviews

- 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
CVA

- Right Brain Injury
  - Paralyzed Left Side
  - Special Perceptual Deficits
  - Quick Impulsive Behavioral Style
  - Memory Deficits

- Left Brain Injury
  - Paralyzed Right Side
  - Speech-Language Deficits
  - Slow, Cautious Behavioral Style
  - Memory Deficits
Example of a Low Tech Device: Rocker Knife

$8.95

$26.50
Example of a Low Tech Device: Octopus Stand

$3 - $15
Example of an Elementary & High Tech Device: Saebostretch & Saeboflex

- Saebostretch: $349
- Saeboflex: $1690
Example of a High Tech Device: Bioness Hand FES

$6200
Other Resources


- Trish Wielandt et al., **Factors that predict the post-discharge use of recommended assistive technology.** Disability and Rehabilitation: Assistive Technology, January-June 2006; 1(1-2): 29 – 40
Other Resources