Bridging the Gap between Consumers and Products in Rehabilitation Medicine

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How is assistive technology used?

• Mental and / or Physical Activities
  • Improve functioning
  • Overcome disorder or impairment
  • Prevent worsening of a condition
  • Strengthen a weakness

❖ Goal: Increased Independence
ADLs

- Self Care
  - Mobility
ADLs

- Self Care
  - Dressing
ADLs

- Self Care
  - Eating and Meal Preparation
• Self Care
  ➢ Eating
ADLs

• Self Care
  ➢ Hygiene
ADLs

- Communication
ADLs

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

- Vocational and Educational
The Transdisciplinary Rehabilitation 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
Steps to Successfully Issue an Assistive Device

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

Home and Patient evaluation:

- Health Status
- Cognitive Status
- Economic
- Physical Environment
- Social Aspects
- Personal
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.*
High Versus Low Tech
Quadriplegic Feeding Aids

$149

$6000
Whenever possible, keep it simple.
Assistive Technology: One Size Doesn't Fit All

Total Hip Replacement - precautions

Long Handled Sponge

At 2 months, 30% of patients aren’t using the device
How this all Relates to Product Development

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

- Allegro Medical
- Abledata
- North Coast Medical
- Sunrise Medical
Other Resources


Other Resources


- RESNA

- Accessible Technology Coalition
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

$349

$1690
Example of High Tech Device: Rewalk Exoskeleton

$90,000 +