

OVERVIEW OF ASSISTIVE TECHNOLOGY AND ITS DIVERSE APPLICATIONS

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What is assistive technology?

- Under the Tech Act, assistive technology (AT) is defined as:
 - *"Any item, piece of equipment, or product system, whether acquired commercially or off the shelf, modified or customized, that increases, maintains or improves functional capabilities of individuals with disabilities."*
- AT services are defined as:
 - *"Any service that directly assists an individual with a disability in the selection, acquisition, or use of an assistive technology device."*
- AT is a broad field that encompasses of range of low to high tech options

Categories of Assistive Technology

- Daily Living
- Communication
- Vision
- Hearing
- Learning, Cognition and Development
- Mobility, Seating and Positioning
- Environmental Adaptations
- Vehicle Mods and Transportation
- Computers and Related Peripherals
- Recreation, Sports and Leisure

Trends in Digital Technology

- Built-in accessibility features across mainstream devices like computers and phones
- Voice assistants that enable people to ask questions and complete tasks hands-free
- Change from one-time purchases to subscription pricing models
- Increase in mainstream smart home products
- Increase in internet-connected devices
- Legislative changes to digital accessibility from the Title II ADA Digital Accessibility Rule
- Strong marketing that may require research to determine the reality of the item
- Artificial intelligence is embedded in much of our technology systems

Factors towards a Good “Fit”

- Dynamic interaction between factors of the:
 - **Person:** personality, preferences, skills, culture, knowledge, abilities
 - **Environment:** built and natural environments and objects, and their attributes such as noise and light
 - **Technology or “Tool”:** characteristics and abilities of the technology itself and how it interacts with the person and the environment
- Models of assistive technology highlight that these factors are unique to the person, their physical and social environments, the tasks they need to complete, the assistive technology system, and other technology it must interact with

Person and Environment Factors

- What are the person's goals and needs?
- What are the person's strengths, abilities, and preferences?
- What task(s) must be completed?
- What are specific demands of the task?
- What environment(s) is the technology being applied in?
- What are the factors of the environment?
- What barriers are currently preventing success?
- Are there other people in the environment who will use the system?

Criteria for Evaluating AT

- Developed with consumers through data gathered by CAT and WNYIL in the mid-90's:
 - Effectiveness
 - Affordability
 - Reliability
 - Portability
 - Durability
 - Securability
 - Physical security/safety
 - Learnability
 - Physical comfort/acceptance
 - Ease of maintenance/repairability
 - Operability

Applications of Assistive Technology

Bathing

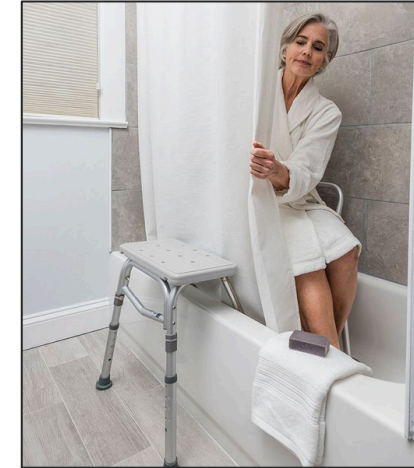
- Range of physical supports for tubs and showers for personal and environmental characteristics
- Much more than just a “shower chair”



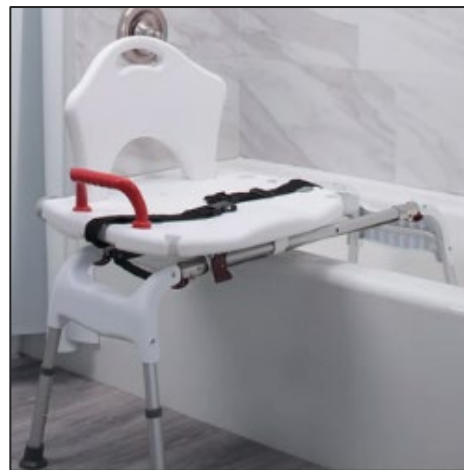
Shower Chair with
Backrest and Handles



Drive Tub Bench



Tub Bench with Curtain Guard



Drive Sliding Transfer Bench



Drive Bath Lift



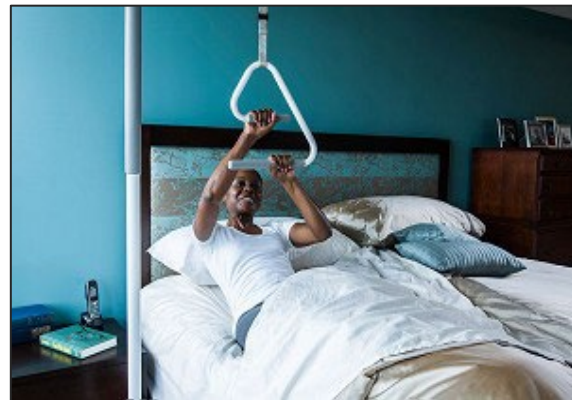
Rifton Wave Bathing System, shower
base (left), tub transfer base (right)

Bed Supports

- Bed cane
- Bed rails
- Transfer poles
- Trapeze
- Ladder
- Risers



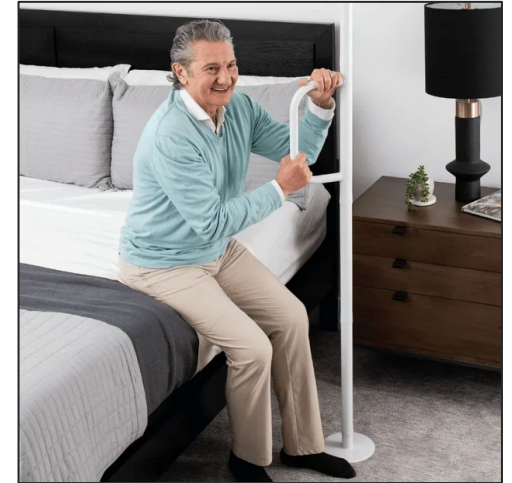
Bed Ladder



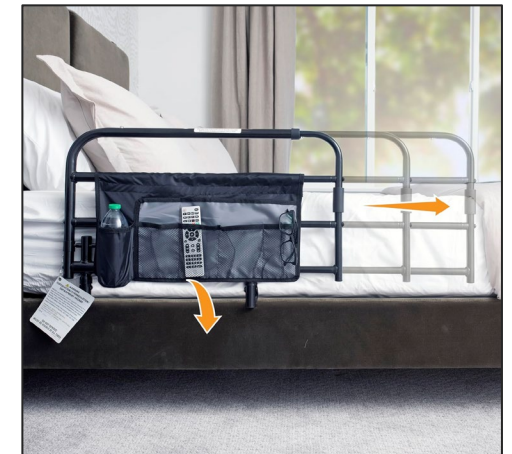
Bed Trapeze with Floor Stand



Drive Medical M-Rail



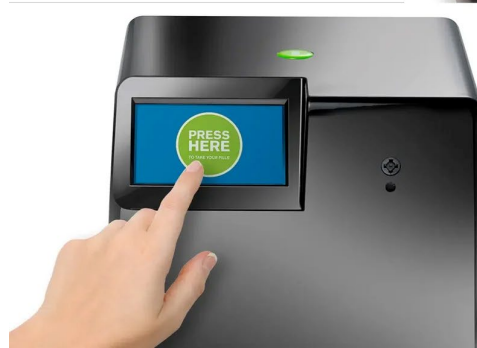
Stander Wonder Pole Lite



Stander Wonder Pivot Bed
Safety Rail

Medication Management

- Physical supports include a range of openers and organizers
- Cognitive supports include a range of AT that uses reminders, alarms, and automated dispensing systems



MedaCube Automatic Pill Dispenser



Pria Medication Dispenser



Locking Pill Organizer with Timer



3D Printed Blister Pack Opener



Remedic Medicine Bottle Opener

Grasp and Reach Supports

- Range of tools and modifications for grasping, reaching, holding, and manipulating objects



Pocket Dresser Multi-Tool



DIY Universal Cuff for Hose



P'kup Card Tool



Faucet Handle Extender



Short Reacher



EaZyHold Silicone Universal Cuffs

Home Automation

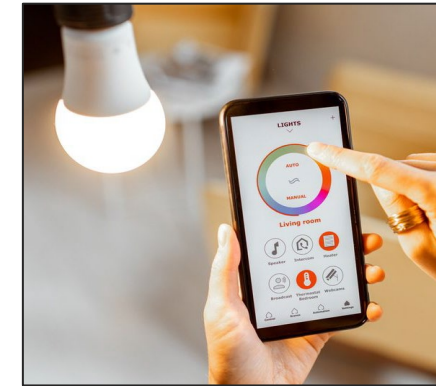
- Internet connected devices or “smart home”
- Infrared and radio control units do not require internet or voice assistant
- Factors to consider include setup and maintenance of a smart home system and tasks being completed



Remote Control Plug



Alexa Smart Plug



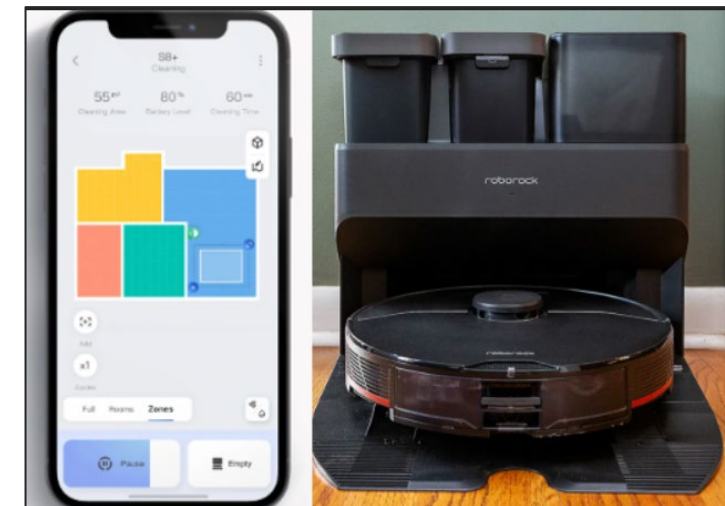
Smart Lightbulb



Honeywell Smart Thermostat



Switchbot Bot on light switch and buttons



Roborock Self-Emptying Vacuum and Mop

Facilitating long-term use & limiting abandonment

- **Selection and acquisition**
 - When users are involved in selection, devices are more likely to be retained
 - Trialing of a device can assist in selection
- **Device performance**
 - Considering how device meets user needs, its reliability, comfort, ease of use, safety, and durability
 - Selecting devices that are expected to be supported long-term, by established manufacturers and vendors
- Training is often necessary for users and stakeholders and may need to be ongoing
- Considering factors of the person-environment-technology fit throughout the process

Western New York TRAID Center

- The University at Buffalo Center for Assistive Technology provides the NYS Technology-Related Assistance for Individuals with Disabilities (TRAID) Program in WNY
- Counties served: Erie, Niagara, Orleans, Genesee, Wyoming
- Free device loans and demonstrations for individuals with disabilities, their family members, professionals, and students
- An extensive inventory of AT devices is available, supporting all ages
- NYS counties are supported by [TRAID Programs](#) and other states' programs are listed through the [National Assistive Technology Act Technical Assistance and Training \(AT3\) Center](#)

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All services, including loan returns, are by appointment only