Equipment Needs for Home & Community
I-ADLS for the ABI Patient
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At last September's AANLCP annual conference in San Diego, I presented Assessment and Equipment Needs of the Older Adult Acquired Brain-Injury (ABI) Patient: Implications for the Life Care Plan. This presentation included equipment and home modification needs for basic activities of daily living (ADLs), such as beds/mattresses, dependent care positioning, wheelchair positioning, casting/splinting needs, and household mobility and access. However, it is well known that the brain-injured person may often be physically independent yet have residual cognitive or perceptual deficits that impact home and community independence. Consideration should also be given to equipment or devices for use in instrumental ADLs (I-ADLs), activities that involve interacting with the environment. Though generally optional in nature, these are often complex.

The goal of the ABI Occupational Therapist is to promote independence, ensure a safe environment, reduce caregiver burden, be mindful of costs, and promote quality of life for all involved. This article offers a rehabilitation specialist's perspective of the need for specialized care for the ABI person at home or in the community. For our life care planner colleagues, cost estimates are also provided.

Proper equipment recommendations and procurement can have a tremendous impact on an individual's quality of life. With proper equipment and training, families can take their minimally-conscious loved ones home instead of sending them to skilled nursing facilities. On the opposite end of the spectrum, many impaired individuals are able use cognitive aids to live independently in the community and contribute to the workforce.

Durable medical equipment is a term familiar to any nurse life care planner. In brain injury rehabilitation, "equipment" includes many kinds of devices. Assistive technology can be defined as "any item or piece of equipment or product system, whether acquired commercially, off the shelf, modified, or customized, that is used to increase, maintain or improve functional capacity of an individual with a disability." The term cognitive prosthetic may also be familiar. This can be a single piece of assistive technology or an entire system that helps a person with specific cognitive deficits to function more independently.

Assessing equipment, devices, or technology for client and family is an ongoing process, as client abilities change and technology offers advances. The life care planner should consider how expected changes in the client's future functioning, such as those related to aging, inactivity, or sensation/cognition, will impact choices. Periodic functional home assessment will help the care team identify cognitive prosthetics to promote independence in activities of home safety, home management, medication management, financial management, community safety, and leisure activities.

HOME SAFETY
Before discharge from a hospital or community-based therapy program, any person with cognitive impairment should be assessed for the level or amount of supervision needed from a caregiver. An instrument such as the Supervision Rating Scale (SRS) can assist in this determination. If status other than "independent" is recommended, the life care planner should consider equipment for home safety. Can the individual get out of the house in the event of household emergency? Can the individual access emergency services or activate an emergency response if the caregiver's safety is compromised? Smoke detectors or carbon monoxide detectors with audible and visible alarms should be present in several locations throughout the home. Many are low-cost and available at local hardware stores as individual devices or kits. Bilingual or vibrating alarms may cost up to $200.

Commercially available communication devices, including programmed cell phones and smart phones with emergency numbers are low-cost options. A Bluetooth® headset or hands-free adaptor for those with limited fine motor control promotes independence. Also, many cell phones have hands-free dialing to voice prompts. For those with more impaired cognition or communication, devices such as a large button phone or picture phone are available for $50 and less.

1 Assisting Technology Act of 1998
In the event of a household emergency or caregiver incident, an individual must be able to plan for and implement a safe plan to get out of the home. When time is of the essence in emergency egress, providing access to physically move to a safer environment is critical. Modifications should include accessible doors and locking mechanisms that are easily manipulated by weak or uncoordinated hands. Costs can be $20 for a key holder or door lever. More expensive keyless door locking mechanisms using a touch pad or numerical punch keypad must be custom-installed and may cost up to several hundred dollars.

Monthly costs for security systems with automatic alert to EMS vary according to region.

Wearable "panic buttons" are available from several providers. Costs for these vary, based on features and average $40 a month for service and monitoring. Compared to the cost of an attendant for 24-hour supervision, these systems offer substantial savings over time.

FALLS AND WANDERING
Is your client at risk for falls, or at risk for wandering within the community? Other simple, low-tech and low-cost devices can help here. Improved home lighting may be an effective fall prevention system. Nightlights or motion-sensitive lights inside and outside the home may alert a caregiver. Other recommendations may include simple installation of lamp adaptors, such as a touch lamp, voice activated environmental control unit (ECU) device, or timer. Alerting devices, such as wireless strobe and chimes, door and window alerts, and motion sensors, range from $25-$200.

HOME MANAGEMENT
Individuals who are unable to return to competitive or sheltered employment are often able to be homemakers. Many cognitive and environmental aids and commonly prescribed adaptive devices are available to promote safety and independence. Consider the newer commercially available home appliances with smart technology that may be especially helpful for the homemaker. For example, a simple touchtone phone can arm a home security system, control household temperature gauges, or control appliances remotely. A family member, from a remote location, can ensure that house is safe upon arrival for the individual, set up a home alarm, and "lock in for the night" remote. This may decrease or eliminate the need for onsite attendant care or family burden.

New state-of-the-art refrigerators have built-in computers that can assist in meal preparation, storing and displaying recipes and reminders to assist in meal planning, generating shopping lists, and even budgeting. The visual recipe display can assist the client who has sequencing difficulties. Advances in stove technology can give the cook audible alerts and reminders that can be heard in remote areas of the home and can prompt recall during divided-attention tasks. Adding heat-resistant countertops, sprinkler systems, and built-in fire extinguishers over stove tops may reduce potential for fires.

Costs for these technologies depend on the need to upgrade existing structures and wiring and local availability of professional installation.

MEDICATION MANAGEMENT
Fine motor and visual discrimination skills and memory will dictate the most appropriate strategy for self-medication management. One free, low-tech option is a visual medication chart. Another is programming an existing cell phone with physician, pharmacist and medication information and setting repeating alarms. Pill boxes or strip boxes are available at local stores for costs of $1 to $25, depending upon features. A higher-tech option is a commercially available digital watch or specialized medication alarm watch, such as the Cadex Watch®, $80-90. (http://www.cadexwatch.com) A more sophisticated self-dispensing medication system, such as the AutoPills Dispenser® system, upwards of $500, (www.autopills.com), allows a caregiver to load medications and lock the device which will then dispense up to 15 pills per day for several weeks. Diabetics may pose particular challenges. Blood glucose monitoring systems should be simple to use, should include large print computer graphics and be accompanied by a chart that is easy to use. Costs vary from $30-85. Insulin syringes may require adaptation or support devices to assist in loading, and cost $25-50 or can be supplied by the pharmacy preloaded. Care for other medical conditions, such as stomas may also require strategies or devices to promote safety and independence. Collaboration among the client, Occupational Therapist, and WOC nurse guarantees personalized strategies or adaptations.

FINANCIAL MANAGEMENT
Responsibilities for financial management vary among individuals, from simple functional consumer purchases to household bill paying, budgeting, or annual tax preparation. Low-tech strategies for $25 or less include simple organization aids such as accordion files, filing cabinets, monthly calendars, or a dry erase board. A cell phone or PDA has a calculator that is helpful in calculating percentages, tax, and tip amounts. Computer software for managing household budgets, such as Quicken® or QuickBooks® (up to $200), can be set for reminders for accurate and timely bill paying. Some individuals need assistive technology such as big keyboards or screen magnifiers to assist with online banking. Both Macintosh and
Windows operating systems include fully functional and customizable adaptations for visually-impaired users.

COMMUNITY SAFETY
A memory-impaired individual must carry personal identification at all times for safety. This may be as simple as a free handwritten wallet card listing personal, medical, and biographical information. A cell phone or PDA should be programmed with the same information.

Consider how the individual will be able to navigate safely within the community. This will require ability to route, use private or public transportation, or drive. People with memory issues or who use some medications may become confused when unplanned events or situations occur, such as when construction relocates a familiar bus stop or requires a driving detour. A hand-held GPS and some other wireless devices both track and transmit a signal, allowing caregivers to monitor a person's whereabouts. Costs for these devices include initial purchase of the device and annual service plan, which is variable, and can average $1,500 per year.

LEISURE AND HEALTH MAINTENANCE
It is essential that individuals have access to fitness programs within their home or community. Equipment recommendations may include low-cost devices such as resistive exercise bands and hand or leg weights. Others may require a more sophisticated home gym for weight training or strengthening. Cardio equipment, like an upper- or lower-body bike, is much more expensive (approximately $2500-3500). It may be more cost-effective to plan for costs for lifetime gym membership and a personal trainer or home health aide, to ensure that the client follows a home exercise program. Access to community fitness programs often include access to a heated pool, tai chi or yoga programs, organized social events, and other programs that are beneficial to promotion of a healthy lifestyle. For additional resources for ABI rehabilitation, caregivers and professionals are encouraged to visit www.shepherd.org & follow the link to My Vital Connections.

About the author
At the September 2008, AANLCP annual conference in San Diego, Eugenia Herbst presented Assessment & Equipment Needs of the Older Adult ABI Patient-Implications for the Life Care Plan. Ms. Herbst has 19 years of experience working with the neurologically impaired population. She serves as a member of the ABI Leadership team, providing education for occupational therapists in the post-acute setting on a local, state, and regional level.

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If you wish to have your information available to non-members, there are two options within the "Find a Nurse Life Care Planner" web page.

Option 1 is available at a cost of $100 annually. Those selecting this option may include their contact information, and a brief (150 words or less) description about themselves, or their business.

Option 2 is available at an initial setup cost of $200 and annual renewal of $100. Those selecting this option may include their contact information, photo, logo, and description (maximum 1000 words). This option will also provide the nurse life care planner, without a business website, the availability of a direct website address of this web page.

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