## A Best Practice Model for Home Access Services: Collaboration between Occupational Therapy Practitioners & Home Access Professionals

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## **Background**

The evolution of aging in place dates back to the early 1980s; however, heightened awareness was not until a decade later, in the early 1990s. Data research, journals, and article publications from 1980 to 2010 created widespread awareness of the potential impact on government-funded health care, including acute and long-term care, income, work, retirement patterns late in life, and quality of life (Vasunilashorn et al. 2012). Also, residential patterns and living arrangements were of concern for policymakers. The availability of family members to provide care was an important factor in the lives of elders. In 2008, it was estimated that there was a 60% probability that any new home in the United States would be resided by a person with a physical functional impairment over its lifespan (Smith et al., 2008). It was also recognized that the issue of home accessibility affects not only persons with age-related functional impairments or disabilities but also their caregivers. From 1980 to 2010, an aging-in-place movement emerged as future socio-economic trends spawned uncertainties about the health and disability of seniors living in America.

Over the past four decades, healthcare professionals and policymakers who provide services to older adults and people with disabilities have placed great emphasis on conceptualizing aging in place and home accessibility as an attainable and sustainable goal. While research heightened the awareness of the growing number of people over 65 years of age, a shift in priorities and resources toward deinstitutionalization resulted in payment policies and programs that reflect a paradigm shift away from long-term facility care as the most likely alternative for housing and to aging in place in the home. In 2023, the Centers for Disease Control and Prevention (CDC) reported that one in four adults live with some disability, and two in five adults age 65 years and older have a disability (CDC, 2023). With much focus on the aging population, we cannot lose sight of the fact that disability impacts people of all ages.

Occupational therapy practitioners have been a key clinical discipline in home modifications for over 22 years and have appreciated the interplay of environmental factors as barriers or facilitators to daily activity performance (AOTA, 2023). Occupational therapy practitioners have been recognized as home modification specialists through evidence-based practice and research and are recognized by federal and state funding agencies and national consumer organizations. While occupational therapy practitioners have long played a vital role in identifying strategies that enable individuals to modify their homes to maximize performance in daily activities, physical therapy practitioners may also endorse the skill sets as home accessibility specialists.

## Where We Are Today

As the demand for home accessibility services and products continues to grow for both aging and disabled populations in the United States, it is common for clinicians and home access professionals to use the Americans with Disabilities Act (ADA) standards as a standard of practice when making home accessibility and aging-in-place recommendations. These ADA standards apply to places of public accommodation and commercial facilities and do not extend to home environments, and cannot be enforced. Strictly using ADA standards when making home safety and accessibility recommendations can lead to waste and *minimal compliance practice*, which force-fits the person to a modified environment when recommendations are based on ADA standards alone. This practice potentially creates barriers to function and hinders independence for aging adults and people with disabilities. Furthermore, *minimal compliance practice* can lead to institutional-looking environments and create barriers for aging spouses, caregivers, and other family members who reside in modified homes and retirement communities.

Today, there are widespread gaps and challenges in the service delivery model for home access professionals and occupational and physical therapy professionals specializing in home accessibility. These gaps include limited education and training, inadequate coordination of services and consumer care, and barriers to funding. The most significant gap in the service delivery model includes the lack of understanding of professional roles and trust between occupational therapy practitioners and home access professionals. Despite being a part of the home access team, the collaboration between the two professionals is underutilized as a best practice and undervalued in achieving outcome-focused services and care to consumers.

In addition to the challenges aging adults and persons with disabilities face are the housing market crises. The shortages in the housing market have created gaps in available, safe, and affordable accessible housing. In a recent study in 2023, *Improving America's Housing*, completed by the Joint Center for Housing Studies of Harvard University, the annual spending on home improvements, repairs, and remodeling of owner-occupied and rental properties increased 103% since 2012 and with a 31% spike following the COVID-19 pandemic, much higher than the average 2% to 5% per year prior to 2020 (Harvard University, 2023).

When we look at these populations holistically and the interrelationship between the medical conditions and social determinants of health, the challenges and complex cost burdens they are confronted with commonly include the cost of disability and medical care, the cost of caregiver assistance, and the cost of safe and accessible environmental services. Navigating the complexities within each of these areas of cost burdens becomes a vicious cycle and ultimately leads to deteriorating health and well-being, loss of independence, and possibly death.

## The Purpose

To protect consumers and bridge the gap between home access and health care professionals by developing best practices and industry standards that ensure delivery of properly configured home access solutions regardless of age, diagnosis, or financial resources.

#### The Vision

To develop best practices and industry standards in the home accessibility service model that will yield positive outcome measures and quality of care for aging adults and persons with disabilities. These outcome measures will reflect the value of the home accessibility team to payers, consumers, and the general public.

## **Terminology & Definitions**

Terminology and definitions are outlined for clarity throughout the white paper.

#### Accessibility:

Accessibility is when the needs of people with disabilities are specifically considered, and products, services, and facilities are built or modified so that they can be used by people of all abilities (CDC, 2020). Accessibility applies to individuals' homes, schools, workplaces, transportation, communities, and any environments they will engage in during their lifespan.

#### Activities of Daily Living (ADL):

Activities of daily living (ADL) are the basic tasks of everyday life. These activities include eating, dressing, grooming and hygiene, bathing, toileting, and functional mobility, such as walking and getting into or out of a bed or chair.

#### Aids for Activities of Daily Living (AADL):

Aids for activities of daily living (AADL), also known as daily living aids, self-care equipment, and basic assistive technology, include simple devices that help individuals with physical, visual, hearing, and cognitive limitations perform ADL and IADL tasks safely. AADLs may compensate for impairments and functional limitations and enable a quicker, safer, or more-efficient performance of everyday activities. AADLs are often distinguished from other assistive technologies as low, simple, or basic technology. These devices include, but are not limited to, long-

handled reachers, shoe horns, and sponges, sock aids, adaptive eating, drinking, and cooking utensils, one-handed devices for grooming and cooking such as toothpaste dispensers, can openers, and cutting boards, large print calendars, cookbooks, and memory boards.

#### Americans with Disabilities Act (ADA):

The Americans with Disabilities Act (ADA) is a civil rights law that prohibits discrimination against individuals with disabilities in all areas of public life, including jobs, schools, transportation, and all public and private places that are open to the general public. The law's purpose is to ensure that people with disabilities have the same rights and opportunities as everyone else. The 2010 ADA Standards set *minimum requirements* for newly designed and constructed or altered State and local government facilities, public accommodations, and commercial facilities to be readily accessible to and usable by individuals with disabilities. The ADA does not apply to individually owned or leased housing in the private sector not used as a public accommodation, including single family homes, condominiums, or apartments (ADA, 2022).

## Assistive Technology (AT):

Assistive technology (AT) is any item, piece of equipment, software program, or product system that is used to increase, maintain, or improve the functional capabilities of persons with disabilities (ATIA, 2022). AT can be "low tech" (i.e. Alexa, fall detection watches) or " high tech" (i.e. Control4 Smart Home, power wheelchairs).

#### **Business Process and Best Practice Model:**

A business process model (BPM) describes and communicates the current or intended future state of a business process. Some examples of business processes used as common practice in the home access and construction industry include flow charts and Gantt charts, which can consist of workflow events, people involved in projects, timelines, and decision points leading toward paths to outcomes. A best practice model is a business process that includes a set of guidelines that optimizes the business's efficiency and effectiveness (service level) and produces good outcomes.

## Complex Rehab Technology (CRT):

Complex Rehab Technology (CRT) includes medically necessary products and services which are individually configured and require evaluation, configuration, fitting, adjustment, or programming. These products and services are designed to meet the specific and unique medical, physical, and functional needs of individuals with primary diagnoses resulting from a congenital disorder, progressive or degenerative neuromuscular disease, or other specific types of injury or trauma (NCART, 2014). Examples of CRT include but are not limited to individually configured manual and power wheelchairs, seating systems, and other adaptive technologies such as tilting shower commode chairs, standing devices, and gait trainers.

## Durable Medical Equipment (DME):

Durable medical equipment (DME) is standard "off-the-shelf" equipment that provides therapeutic benefits and enables individuals to perform daily routine tasks that he or she is otherwise unable to perform due to medical conditions or illness. DME can withstand repeated use, is used in the home, can be transported outside the home, and is customarily used to serve a medical purpose. Examples include but are not limited to canes, walkers, shower chairs, commode seats, standard patient lifts, transport wheelchairs, basic manual wheelchairs, power scooters, orthotics, and oxygen and diabetic equipment (CMS, 2005).

## Electronic Aids to Daily Living (EADL):

Electronic aids to daily living (EADL) include a wide range of devices that help individuals with physical, visual, hearing, and cognitive impairments carry perform routine tasks safely within their environments and communities. Electronic aids include emergency devices, such as fall detectors, movement sensors, hearing aids, and emergency call systems. Other electronic aids are used to control appliances, televisions, telephones, interior and exterior doors, garage doors, and electronic durable medical equipment such as electric hospital beds. These devices may be touch, touchless (motion sensor switch activation), or voice-activated and can integrate with devices and hardware such as smart displays (Alexa Echo Show) and smart phones, watches, plugs, bulbs, and speakers.

#### Home Access Professional:

A home access professional describes the consumer-facing representative (home access providers) who have the knowledge, training, skills, and experience in evaluating and recommending the most appropriate home accessibility products, assistive technologies, and services. These professionals usually hold specific credentials, certifications, or licenses that endorse their expertise. Home access professionals may or may not hold a general contractors license. General contractors hold licenses that meet state and municipality licensing requirements to provide construction services that include, but not limited to applying for permits, supplying design drawings (contractor's design portion), ensuring subcontractors are licensed, and managing the construction site and inspections.

## Occupational Therapy Accessibility Specialist (OTAS):

Occupational therapists (OT) and certified occupational therapy assistants (COTA) help people participate in their everyday activities of daily living (ADL) and instrumental activities of daily living (IADL), such as routine self-care tasks and community and leisure activities. Occupational therapy considers the complex relationship between the consumer, the activity, and the environment in which activities takes place (AOTA, 2022). An OT or COTA, who is a home accessibility specialist, holds specific credentials and certifications that endorse their knowledge, skills, and expertise in providing home safety and home modification evaluations and recommendations.

#### Home Access Team:

The home access team consists of consumers, their families and caregivers, physicians, licensed health care providers and agencies, case managers, home access professionals, architects, and licensed occupational therapy and physical therapy practitioners who are home accessibility specialists. The team may also consist of consumers' financial organizations or representatives.

#### Home Access Technician:

Field technicians are the home access installers of access products. In addition, field technicians provide product education and training, including ongoing service calls and technical support to consumers post installation.

#### Home Modification:

Home modification is a general term that describes any alteration made to a home to accommodate consumers' abilities based on safety and functional demands. Home modifications are intended to maximize consumers' abilities and include a wide range of products and services, from simple product installations to remodeling or complex structural changes to the home requiring a general contractor.

## Home Safety:

Home safety is a term that generally describes safety recommendations that do not require home modifications. These include simple strategies to reduce falls and physical injuries and mitigate fire, safety, and health hazards, which may include but are not limited to removing throw rugs, rearranging furniture, securing electrical cords, and removing floor clutter that may create trip hazards, and keeping home repairs up to date such as replacing indoor/outdoor light bulbs, ensuring smoke alarms are in good working condition, maintaining safe air and water supply, and establishing a plan for emergency preparedness. Home safety product recommendations may include aids for activities of daily living (AADL) and instrumental activities of daily living (IADL), electronic aids to daily living (EADL), essential durable medical equipment (DME), and complex rehab technology (CRT).

## Instrumental Activities of Daily Living (IADL):

Instrumental tasks of daily living (IADL) include activities that support daily life within the home and community and require more complex thinking and organizational skills. Some examples include but are not limited to meal planning and cooking, grocery shopping, housekeeping and maintenance, medication management, financial management, parenting and caregiving, driving, and using community transportation.

#### Outcome Measure:

Outcome measures reflect service or interventions' impact on patients' (consumers) health status. Outcome measures (i.e., mortality, readmission, patient experience) are the quality and cost targets health care organizations are trying to improve (Tinker, 2022).

#### Quality of Care and Quality Measure:

Quality of care is the degree to which health services for individuals and populations increase the likelihood of desired health outcomes. Quality measures are the tools that help measure or quantify health care processes, outcomes, and organizational systems associated with the ability to provide quality of care (WHO, 2022).

#### Universal Design (UD):

Universal Design (UD) is the design and composition of an environment so that it can be accessed, understood, and used to the greatest extent possible by everyone, regardless of age, size, ability, or disability. An environment (or any building, product, or service in that environment) should be designed to meet the needs of all people who wish to use it (NDA, 2020)

#### Value-based Care:

Value-based care is simply the idea of improving quality and outcomes for patients and consumers and is based on a set of changes in the ways care is received. In health care, the initiative behind value-based care is to be proactive instead of reactive and preventing problems before they start.

## Why We Need a Best Practice Model and Industry Standards

Over the last 30 years, many large and small organizations have developed self-help checklists, guides, self-reported assessments, and apps to help educate consumers about making their homes safe and accessible for aging in place. While these tools and programs are educational and beneficial for consumers, gaps remain in two significant areas of the home access industry outlined below.

1. The lack of mutual understanding of the professional roles and value to the home access team. This gap results from the absence in trust and limited education and training for both professions.

Based on a focus group of home access professionals and occupational therapy accessibility specialists across the country, the most common challenges were reported during home access evaluations or after home access recommendations were completed:

- There were conflicts between what occupational therapy practitioners recommended and what the home's structure and environment could accommodate.
- Occupational therapy practitioners' recommendations (product cost and functionality) did not align with the product and service recommendations made by the home access professional.
- There were compatibility challenges between the home access recommendations and the DME / CRT
  equipment used in the home, creating environmental barriers and functional limitations for consumers,
  families, and caregivers.
- Home access professionals' recommendations did not align with consumers' and caregivers' goals, safety, and functional needs for their lifetime based on the medical conditions or disease process as they age. The recommendations only considered consumers' needs for the "here and now."
- Occupational therapy practitioners felt undervalued as part of the home access team.
- There was little knowledge and understanding of each profession's service delivery and payment models.

Ultimately, these challenges negatively affect consumers' medical, physical, psychosocial, and financial health and well-being. Insurances who currently pay for home access products and services are also affected by the waste when home access products and services are provided inappropriately or negligently.

2. The absence of a best practice business model that outlines and operationalizes best practices to meet the home safety, accessibility, and health care needs of consumers regardless of age, disability, or financial resources.

In 2018, the World Health Organization (WHO) released "WHO Housing and Health Guidelines," a report which addresses the potential benefits of an accessible home environment for people with functional impairments. This review had a specific focus on (1) people with functional impairments for whom accessibility modifications in their home environment may be beneficial; (2) a variety of home accessibility features; and (3) the health and social effects of modifications to enhance the accessibility of the home environment.

While the WHO housing and health guidelines bring together the most recent evidence to provide practical recommendations to reduce the health burden due to unsafe and substandard housing, the guidelines also emphasize the importance of collaboration between the health care providers and other sectors and joint efforts across all government levels to promote healthy housing.

Below in Figure 1, the WHO Housing and Health Guidelines graphic outlines the association between the three focus targets that clearly demonstrate the value of the occupational therapy and home access professional team approach.

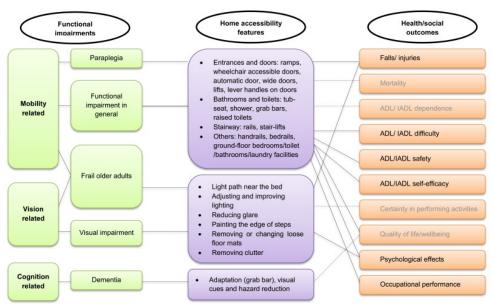


Figure 1: Associations between functional impairments, home accessibility features and outcomes (MacLachlan, 2018).

## **Quality Measures, Outcomes, and Health Care Cost Savings:**

There is much focus on health care improvement and measuring outcomes to care with an emphasis on mortality, hospital readmissions, safety and effectiveness of care, timeliness of care, and patient experience. Literature has shown that appropriate home modifications reduce health care institutions' costs through implementing the Community Aging in Place-Advancing Better Living for Elders (CAPABLE) program. CAPABLE is a time-limited intervention performed by an interdisciplinary team of an occupational therapist, registered nurse, and "handyman" who work with the older adult to set goals and direct an action plan that changes behaviors to improve health, independence, and safety. The intended patients include Medicare beneficiaries with at least two chronic conditions and difficulty with at least one activity of daily living (ADL). According to the John Hopkins School of Nursing (2023), research has shown that CAPABLE has provided more than six times the return on investment by roughly spending \$3,000 in program costs per participant, which yielded more than \$30,000 in savings in medical costs.

In 2016, the International Journal of Architectural Research published an Australian study that explains how a home modifications program directly influences measurable health outcomes in the form of Health Related Quality of Life. (HRQoL) in the houses of older people and those living with a disability (Carnemolla & Bridge, 2016). Measurements were taken before and after the home modifications and revealed that the home

modifications were associated with an average 40% increase in Health-Related Quality of Life levels across six targeted areas, including increased safety and confidence, improved mobility and independence, improved caregiver support, increased social participation, and ability to return home after a hospital episode. Included in the study, more than half (53%) of participants were frail aging adults. Participants, on average, were diagnosed with two or more morbidities and up to five chronic conditions or a permanent disability, as shown in Figure 2.

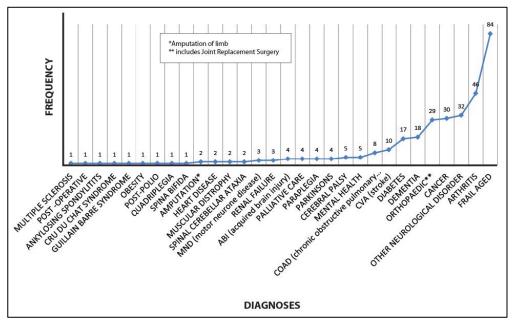


Figure 2: Analyses of diagnoses in the sample.

Home modification outcomes data was analyzed in the sample regarding where the modifications took place. Figure 3 compares the home modifications in each location. Bathroom modifications were the most common in the sample (78.3%), followed by modifications to help with mobility through the home (61.8%) and, finally, kitchen or laundry modification (4.4%).

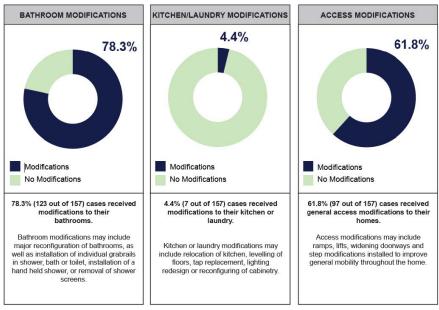


Figure 3: Home modifications outcome data sample

With the continued growth in the aging population, the literature supports a separate set of health outcome measures for older persons (Akpan, 2018); however, there are few resources on consumer (patient) outcome quality measures that specifically spotlight home modifications and access products and services provided by a home access team and which directly relate targeted ADL and IADL performance, giving recognition to the improved safety, function, well-being, and environmental health of homes for aging adults and persons with physical disabilities.

## Best Practice: An Integrated Approach to Value-based Care in Home Access

What does a best practice model look like in the home access industry?

In effort to improve health and social outcomes as demonstrated by the World Health Organization, the five phases of the best practice model in Figure 4 incorporates both home access professionals and occupational therapy home accessibility specialists. This model facilitates collaboration and utilization of best practice and increases quality of care and outcomes for consumers (value-based care) with the end-goal of achieving an outcome-based industry standard.

#### Five Phases of a Best Practice Model:

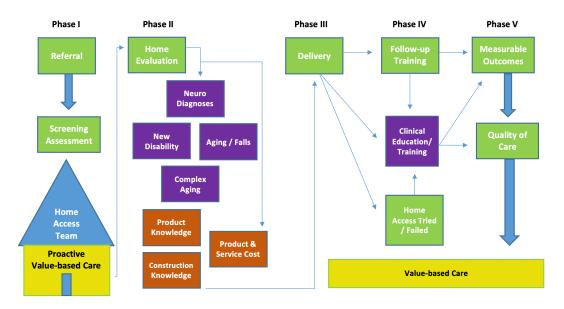


Figure 4: The Five Phases of a Best Practice Model: An Integrated Approach to Value-based Care (Petito, 2022)

## Phase I. Initial Referral Screening Assessment

The home access professional or occupational therapy accessibility specialist may receive the initial referral. In Phase I, a telephonic, video conference, or onsite screening assessment can be completed to gather information about the consumers' needs and include, but not limited to:

- The level of services and products requested.
- Consumer, family, and caregivers' priorities and goals.
- Consumers' health history and functional impairments.
  - For consumers with *extensive* health problems and limiting functional abilities, such as
    progressive or degenerative neuromuscular disease (ALS, MS, Parkinson's Disease) or
    traumatic injuries (SCI, TBI, Amputee), the consumer should be informed of the value and
    benefits of the home access team approach.

Key questions should be asked during the initial referral screening assessment to gather as much information as possible and to help educate consumers about the value and benefits of the home access team.

- Key question examples asked by home access professionals:
  - o Is the consumer currently receiving personal care assistance or skilled health care services, such as home health or outpatient occupational and physical therapy?
  - Is the consumer aware of occupational therapy professionals who specialize in home accessibility?
- > Key question example asked by occupational therapy accessibility specialists:
  - o Is the consumer working with a home access company, remodeler, or contractor?
  - Is the consumer aware of home access professionals, remodelers, or contractors who specialize in home accessibility?

#### Phase II. Home Access Team Evaluation

The evaluation, which includes all members of the home access team, should be coordinated based on consumer, family, and caregivers' comfort level, trust, and agreement to the home access team approach.

- The home evaluation may occur in one coordinated visit or several separate visits by each member of the home access team.
- Continued consumer education should be attempted during the evaluation if consumers disagree with the home access team approach. Ongoing education should include the value and benefits of using home access professionals and clinical specialists with knowledge and expertise.
- Home evaluations by occupational or physical therapy accessibility specialists should be an evidence-based, occupation-focused, and client-centered accessibility assessment and intervention process.

#### **Integration of Best Practice During Phase II**

When should home access professionals refer to occupational therapy accessibility specialists to complete a clinical home evaluation?

Occupational therapy practitioners are vital to value-based care in the home accessibility industry. A clinical home evaluation should be integrated in the home evaluation process under the following conditions that include, but are not limited to:

- Consumers with functional limitations related to a progressive or degenerative neuromuscular
  disease, neurological injury or condition, or congenital disorder which place them or their
  caregivers at high risk for injuries. Below are some examples of diagnoses included within these
  categories.
  - o Lou Gehrig's disease (ALS)
  - o Multiple Sclerosis (MS)
  - o Traumatic Brain Injury (TBI)
  - Spinal Cord Injury (SCI)
  - o Parkinson's Disease
  - o Alzheimer's Dementia
  - o Post-Polio Syndrome
  - Cerebral Palsy (CP)
  - o Spina Bifida
  - Muscular Dystrophy

- Consumers who have a new permanent disability and who are learning new functional skills while adjusting in their home environment. Examples of these types of injuries resulting in a new permanent disability are:
  - o Amputation
  - o Spinal Cord Injury resulting in paraplegia or tetraplegia
  - o Stroke resulting in hemiplegia, visual impairments, or cognitive deficits
  - o Failed hip or knee replacements resulting in immobility
- Consumers who are aging and have functional and physical limitations that are causing frequent falls, which may include visits to the emergency room and hospital readmissions.
- Consumers who have a permanent complex disability and who are aging (i.e., *complex aging* involving a spinal cord injury). Understanding how disabilities affect these types of consumers as they age is a vital part of the outcome measures for home access services and the use of access products.
- Consumers who require additional training in activities of daily living skills (ADL) or instrumental
  activities of daily living (IADL) with use of access products which are outside the knowledge,
  skills, and expertise of the home access professional.
- Previous home access products and services that have been tried and failed to meet the safety and functional needs of consumers and their caregivers.

# When should occupational therapy accessibility specialists refer to home access professionals to complete a home evaluation?

When consumer needs are outside the knowledge and skills of the occupational therapy practitioner, consumers are at risk of receiving inappropriate home access products and services. Some examples may include the following:

- Limited product knowledge, usage, and requirements for installation. Knowing various product choices to meet the needs of consumers is vital.
- Lack of basic knowledge of home construction and remodeling (i.e., locating load-bearing walls).
   Understanding what structural changes are reasonable to best meet consumers' needs is crucial before making recommendations.
- Limited knowledge of the cost of products, materials, and installation and what is financially feasible to meet the needs of consumers.

## Phase III. Home Access Delivery

The provision of accessibility services, including installation of home modifications and products, is conducted by the home access professional.

- Occupational therapy accessibility specialists or other team members may conduct site visits during the delivery process.
- All members of the home access team should receive timely communication and project updates before delivery and upon completion of the product installations.

#### Phase IV. Consumer Education & Training

While the initial education and training occur during the delivery stage, follow-up consumer and caregiver education and training may include occupational therapy accessibility specialists and other health care professionals.

Home access professionals may refer to occupational therapy accessibility specialists to evaluate and provide follow-up education and training for specific functional skills and tasks that ensure safe, independent use of access products, renovations, or modifications.

Examples may include:

- Transfer training from a wheelchair to a stair lift to prevent the risk of falls
- Operation of a manual or power wheelchair throughout a newly modified home
- Meal preparation tasks following a kitchen modification
- Consumer and caregiver training for bathing following the installation of a ceiling lift

#### Phase V. Measurable Consumer Outcomes

Measurable consumer outcomes for home access products and services should have the following characteristics:

- Reflect changes in condition and function that clearly yields a positive impact
- Evidenced based
- Specific and measureable
- Meaningful achieving and fulfills a purpose toward a long-term impact

In light of consumer outcomes for home access products and services, suggested measurable outcome categories may include the four listed below. Outcomes may be measured after a given set of time post-delivery, such as 3, 6, or 12 months after the completed installation, education, and training.

- Products and Services Outcome Analyzes the appropriateness of access products and services that are
  recommended to meet the safety and functional needs of a targeted consumer group, which includes
  ability to perform ADLs and IADLs safety, mitigation or reduction of falls and hospitalization, and
  overall health of the home and the consumer.
- Consumer Understanding Outcome Assesses consumers' and caregivers' ability to make informed decisions about products and services.
- *Consumer Support Outcome* Assesses the home access team's level of support throughout the relationship with the consumer and their caregivers before and after delivery of access products.
- Cost and Value Outcome Analyzes if there is a reasonable relationship between the cost for access products and services and the overall benefit the consumer received from it. This category compares the cost of home access products and services related to the cost of a fall or injury and hospitalization of a targeted consumer group.

## **Standardized Home Accessibility Evaluations**

There are several standardized home assessment tools for use by home access professionals and occupational therapy accessibility specialists, such as the Comprehensive Assessment and Solution Process for Aging Residents (CASPAR), which is listed in a National Council on Aging resource guide (NCOA, 2017). The NCOA resource features assessment tools to examine consumers' homes, make recommendations for changes to improve function and safety, and identify risks of falls. The tools are designed to be administered by occupational therapy

practitioners and other professionals to assess the home environment and the physical, cognitive, visual, behavioral, and psychosocial aspects of aging persons. Other home assessment tools listed are designed for use by consumers, families, and caregivers as a self-report tool to identify safety hazards in the home and provide self-guided recommendations.

In a review of several home assessment tools, each has targeted assessment areas, and some have score sheets or point-system scales by which recommendations are made. However, there needs to be more information on measured outcomes following the completion of these assessment tools and interventions. In addition, many home assessments place emphasis on the aging population, and there is much need for assessment tools that include the disability impacts and accessibility needs of people of all ages.

Several focus groups recommend that the standardized documentation in the home evaluation by home access professionals remain separate from those documented by occupational therapy accessibility specialists. By developing two independent standardized home evaluation criteria, occupational therapy practitioners can ensure that the home evaluation tool and its documentation remain evidence-based, occupation-focused, and client-centered throughout the intervention process. The standardized home assessment tools used by home access professionals and occupational therapy practitioners should report measurable outcomes to the interventions provided and support a value-based care model as best practice.

#### **Professional Conduct: Code of Ethics**

Home access professionals and occupational therapy accessibility specialists should conduct business professionally with each other and consumers. The code of ethics below outlines ethical guidelines to follow as part of best practices.

- Uphold business practices which include respect, honesty, and integrity, while holding paramount the
  welfare of the lives we serve.
- Maintain professional qualifications that commensurate with the services provided, including credentialing, certifications, and licensure.
- Represent expertise, knowledge, and skills honestly and accurately to prospective consumers and only offer services endorsed by professional training and experience.
- Practice only in the area(s) of competence and refer to a home access professional to maintain the highest quality of care and outcomes (i.e. Value-based care).
- Furnish services in a manner consistent with the industry's established and accepted quality standards and within all legal requirements that govern such projects.
- Maintain consumer confidentiality of privileged information.
- Do not discriminate based on race, religion, national origin, age, disability, or sexual orientation.
- Seek deserved, fair, and reasonable remuneration for products and services.

## **Conclusion**

The collaboration, understanding, and trust between home access professionals and occupational therapy accessibility specialists are vital components to a value-based best practice model that delivers care to aging adults and persons with disabilities who need home modifications and home access products and services. Developing a best practice model will address the gaps and challenges between the home access and healthcare industries. The model can also lead to an outcome-based industry standard that measures meaningful and functional interventions and yields improved quality of care for consumers. As the demand for accessible housing and care in the home continues to grow, so will healthcare costs and consumer and caregiver burden. The time has come to develop a best practice model to protect and help consumers and their families with the burdens of aging and disability.

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#### Resources

Akpan A, et al. (2018, February 2). *Standard set of health outcome measures for older persons*. The National Library of Medicine. https://pubmed.ncbi.nlm.nih.gov/29394887/

- AOTA (2023, January). *What is Occupational Therapy?* American Occupational Therapy Association. https://www.aota.org/about/for-the-media/about-occupational-therapy
- AOTA (2023, January). *Productive Aging: Home modifications & key community partnerships*. American Occupational Therapy Association. https://www.aota.org/practice/practice-settings/home-modifications-key-community-partnerships
- ATIA (2023, January). *What is Assistive Technology?* Assistive Technology Industry Association. https://www.atia.org/home/at-resources/what-is-at/
- Americans with Disabilities Act (2023, July 1). What is the Americans with Disabilities Act? ADA National Network. https://adata.org/learn-about-ada
- Carnemolla, P. & Bridge, C. (2016). Accessible housing and health-related quality of life: Measurements of wellbeing outcomes following home modifications. International Journal of Architectural Research: ArchNet-IJAR. 10. 38-51. 10.26687/archnet-ijar.v10i2.977.
- CDC (2020, September 15). *Disability and Health Inclusion Strategies*. Centers for Disease Control and Prevention. https://www.cdc.gov/ncbddd/disabilityandhealth/disability-strategies.html
- CDC (2023, May 15). *Disability Impacts All of Us*. Centers for Disease Control and Prevention. https://www.cdc.gov/ncbddd/disabilityandhealth/infographic-disability-impacts-all.html
- CMS (2005, May 5). National Coverage Determination: Durable Medical Equipment Reference List. Centers for Medicare and Medicaid. https://www.cms.gov/medicare-coverage-database/view/ncd.aspx?NCDId= 190&ncdver=2
- Harvard University (2023). *Improving America's Housing*. Joint Center for Housing Studies of Harvard University. https://www.jchs.harvard.edu/improving-americas-housing-2023
- John Hopkins School of Nursing (2023, January). Community Aging in Place-Advancing Better Living for Elders (CAPABLE). John Hopkins University. https://nursing.jhu.edu/faculty\_research/research/projects/capable/
- MacLachlan M, Cho HY, Clarke M, et al. (2018). Report of the systematic review on potential benefits of accessible home environments for people with functional impairments. WHO Housing and Health Guidelines. World Health Organization. Figure 2, Associations between functional impairments, home accessibility features and outcomes.https://www.ncbi.nlm.nih.gov/books/NBK535292/figure/webappf.fig3/
- National Research Council (US) Committee on National Statistics. *Improving Data on America's Aging Population: Summary of a Workshop.* Carr D, Pemmarazu A, Rice DP, editors. Washington (DC): National Academies Press (US); 1996. PMID: 25121233.
- NCART (2014). *Complex Rehab Technology Definition*. National Coalition for Assistive & Rehab Technology. https://www.ncart.us/uploads/userfiles/files/documents/CRT%20Definition%206-1-14.pdf
- NCOA (2017). Assessment Tools for Professionals and Individuals. National Council on Aging. https://homemods.org/wp-content/uploads/2021/06/USC.NCOA\_.HomeAssessment.Inventory.2.-1.pdf
- NDA (2020). What is Universal Design? National Disability Authority. https://universaldesign.ie/what-is-universal-design/
- Smith, SK, et al. (2008). Aging and disability: Implications for the housing industry and housing policy in the United States. Journal of the American Planning Association 2008
- Tinker, A. (2022, June 29). *The Top Seven Healthcare Outcome Measures and Three Measurement Essentials*. Health Catalyst. https://www.healthcatalyst.com/insights/top-7-health care-outcome-measures

- Vasunilashorn, S., Steinman, B., Liebig, P., and Pynoos, J. "Aging in Place: Evolution of a Research Topic Whose *Time Has Come*", Journal of Aging Research, vol. 2012, Article ID 120952, 6 pages, 2012. https://doi.org/10.1155/2012/120952
- WHO (2023). *Quality of Care*. World Health Organization. https://www.who.int/health-topics/quality-of-care#tab=tab=1
- WHO (2018). Associations between functional impairments, home accessibility features and outcomes. World Health Organization. https://www.ncbi.nlm.nih.gov/books/NBK535292/figure/webappf.fig3/