Wayfinding

This document is geared towards care partners* of persons with dementia (PWD).

Wayfinding refers to an integrated system of navigation that enables individuals to find their way with increased ease and independence within a built environment. “The process of finding one's way includes knowing where you are, knowing your destination, knowing and following the best route to the destination, recognizing the destination upon arrival, and finding the way back” (1). The autonomy and quality of life of persons with dementia (PWD) is strongly linked with their ability to reach certain places within their environment; however, spatial disorientation is a prime reason for institutionalization (2). Design elements such as floor plan layout, landmarks, and other aids to navigation (e.g. pictograms, words, sensory cues and colours) are used in wayfinding with the primary goal of providing cues to location and direction. Effective wayfinding is critical to the safety and well being of persons with dementia and will promote self-sufficiency, comfort and a sense of security. Proper planning and careful selection of wayfinding resources represents an important investment for all health care facilities and other environments, and can assist with reduction in anxiety and responsive behaviours.

* Care partners can include family, friends, neighbors, volunteers and health professionals.

This recommendation is organized in the following sections for your review:
Floor Layout, Hallways, Landmarks, Memory Boxes, Washrooms, Meaningful, Experiences, References & Other Helpful Resources

Although this recommendation is focused on the long-term care sector, recommendations can be implemented in alternate care settings.

Some language throughout this document may not be consistent with that of the community of practice or Ontario guidelines as various works are quoted throughout. Please refer to the Alzheimer Society of Canada’s language guidelines.

DEMENTIA - Friendly *Design Considerations*

Floor Layout

RECOMMENDATION:

Floor plans should be simple, but not repetitive in order to increase wayfinding ability.

Rationale: Environments which compensate for perceptual difficulties are necessary to assist PWD in wayfinding (2).Visual access to major spaces such as activity areas increases their use (3).

Note: Floor plan design of long-term care homes in particular has a significant influence on resident spatial orientation and wayfinding.

Effective floor plans means less need for signage.

Are common spaces popular for activities? Have distinct rooms and themes to accommodate behaviours.

Strategies:

- Create straight and direct layouts to functional destinations, with limited changes in direction to assist with better wayfinding ability (2,4). Long corridors and changes in direction can interfere with PWDs orientation (2).
- Ensure floor plans are simple and easy to follow with spatial proximity of kitchen, dining and activity room (e.g. kitchen dining and activity room placed next to each other or within sight of each other) so persons can find their way to these areas with reduced anxiety (5, 6).
- Develop simple, easy to understand decision/reference points such as signage or specific landmarks when dividing long corridors (e.g. arrows, picture of toilet on walls and doors)(2) while avoiding information clutter/overload (7).
- Make the distinction between floor plans intended to assist with wayfinding versus those intended for uninterrupted pacing (e.g. short corridors to functional destinations versus circular, and bench seating for those with walking limitations.

Hallways

RECOMMENDATION:

Hallways need to be clutter-free, with few decision points between destinations and clearly visible endings to provide a safe pathway and improved orientation for PWD (4)

Rationale: Uncluttered hallways help PWD more clearly see their "destination" and strategically placed areas to break up hallways allow for resting enroute to their destination. While hallways may be the only logical place for motorized devices, wheelchairs and rest areas, this needs to be clearly contrasted with unacceptable obstructions such as dirty linen carts, mechanical lifts, and storage. It is best to keep corridors short and ensure they end in an activity to reduce confusion and agitation (8).

Strategies:

- Incorporate recessed benches in the hallway to allow for resting by PWD who get tired from walking. Ensure that these are detailed in your fire plan and that you consult with your local Fire Marshall as restrictions may apply to furniture in hallways. If this becomes an issue, consider hallway benches with seats that flip up with a fire safety plan ensuring staff members are trained to flip these benches up in case of a fire drill or alarm (38).
- Incorporate alcoves to accommodate mechanical lifts, laundry carts and other large items.
- Avoid flooring with patterns and reflective shine and high glare as PWD often mistake dark markings on floors as holes, bugs, etc., and glare is often mistaken for icy surfaces (See Lighting recommendation).
- Low pile carpeting is preferred flooring for PWD in the event of a fall as it can soften the fall more than harder surfaces as well as minimize glare and noise. Issues of carpet cleaning, maintenance, and infection control may be deterrents to carpeting; however, consideration may be given to alternate flooring such as cork floors and rubberized tiles (9).
- As long corridors interfere with the wayfinding ability of PWD, the fewer changes in direction the better. L, H and square shape units have been identified as enabling better orientation for PWD (4).
- At minimum, the width of hallways should be 6ft – 8ft to provide adequate accessibility for persons using wheelchairs and other assistive devices (10).
- Avoid dead ends in corridors by creating comfortable seating, activities (e.g. life skill station), or signage at the end of the hallway to reorient PWD and lead them back to activity areas (5).
- Keep corridors clear of equipment– otherwise they are distractions and PWD may use other routes to their destination (9).
- Use handrails throughout hallways to assist with general wayfinding and transition from room to room while including different shapes and textiles (12)

Landmarks

RECOMMENDATION:

Consider the placement of cueing devices or "landmarks" to assist with place recognition, orientation and at decision points where navigational choices must be made (i.e. doorways, corners, or intersections of corridors) (13).

Rationale: Landmarks are defined as orientation cues that establish a clear reference point and act as focal points within functionally different spaces. Buildings and monuments serve as focal points or landmarks for a city. Similarly, landmarks can be created for interior spaces by using distinctive architectural elements or by accommodating unique activities in smaller alcoves (14). PWD continue to use landmark strategies in wayfinding throughout the course of their dementia (36). The use of objects has been demonstrated to assist wayfinding (6, baj). Cues should be strong, bold, varied, distinctive and familiar. Furniture, decor and names of rooms can help cue functionality of spaces such as living rooms, kitchens, and bathrooms, as well as invoke a sense of familiarity (7).

Strategies:

- Provide landmarks within functional activity areas and at entrances from corridors which act as distinctive cues. (e.g. clocks, artwork, hanging quilts, or furniture items to which the resident finds meaningful) (18).
- Mount well-lit display boxes that offer changeable displays/menus and can be used as wayfinding cues. (e.g. fine china patterns or pictures of cutlery located outside the dining room should be consistent with the dining location and confirm to the PWD that they are in the right place) (6).
- Utilize cues to mark areas and create a sense of familiarity (e.g. study room has a chair, desk, bookshelf and telephone) (1). Avoid repetitive elements throughout rooms, as the differences in and between rooms must be obvious.
- Consider the combined use of tactile and audible landmarks for visually impaired persons (3).
- Mirrors should be avoided because they can increase the level of confusion and anxiety (26).
- Utilize cues to mark services provided in the facility (e.g. barber pole for the hair salon, appropriate symbol for the centre of worship, etc). Ensure the name given to a room reflects functionality and is consistent among staff and residents. The use of symbols or logos may be indecipherable to some PWD, therefore the use of generationally appropriate language is encouraged (22).
- Coordinate cues with the vocabulary used on other signs and ensure cues are reflective of the linguistic and cultural particularities of PWD to the greatest extent possible (18). In some cases, pictures may be more valuable than words for cueing and direction, although silhouettes of a man or a woman are not particularly successful (6). Where possible, consider using signs and pictures that include objects (24).
- Wayfinding to bedrooms can be aided by the use of important objects for each individual (e.g., having a picture (2- sided) hung from ceiling to draw attention to their room that include a photo of trains, dogs or other objects that are important to PWD). The picture should be hung about a foot length from threshold outside in hallway. This catches attention of people as they turn corners (25).

Note:

- Colour can be used to both highlight and camouflage exits or rooms that are not safe for
- PWD. Please refer to the Doorways recommendation.
- Flat paint can be used to avoid glare.
- Warm-colour environments, such as oranges, red and earth-tone colours consisting of a long wavelength, proves to stimulate the nervous system of a person (2).
- Cool-colour environments, such as greens and blues with a short wavelength, will do the opposite and slow the nervous system (2).
- As the stimulation effect of color is lost when it becomes familiar, the literature on color- coding suggests that color should be used in conjunction with other design cues (29).

Memory Boxes

RECOMMENDATION:

Create memory boxes or personalized collages by the room doors of PWD which contain objects that are special to each individual and are kept in or outside of their room.

Rationale:

Memory boxes can assist persons with mild dementia to locate their room independently, reinforce cognitive skills in wayfinding, stimulate conversation, and make walking more interesting (28). In the later stages, when PWD cannot express themselves as they once did, memory boxes serve to help others better understand the person behind the disease.

Strategies:

- Ensure memory boxes are filled with personalized items that are interesting and meaningful to PWD by creating them with the PWD and their family. Place the boxes where they are clearly visible and secure at each PWDs room in order for the boxes to be accessible and enjoyed.
- Utilize special markers to individualize and identify rooms of interest (e.g. an object of significance such as a door decoration) to provide extra cognitive cues for PWD. This may help to decrease stress and effort levels while increasing independence in wayfinding and/or meaningful wandering (21). Items from early childhood are most effective (10).

Washrooms

RECOMMENDATION:

Toilets should be visually accessible and easy to find for PWD. The setup of the toilet areas should encourage and cue independent use through visual access and legibility.

Rationale: Visual and perceptual access, legibility and appropriate signage can assist PWD to locate toilets (and other important destinations); be more independent/continent; and exhibit less anxiety, fewer wandering and exit-seeking behaviours. While "the evidence for the incorporation of good visual access on the unit level scale is not strong, the dramatic effect of making an important amenity, the toilet, easily seen provides good supporting evidence for the concept"(27). Even long-term care home residents in advanced stages of dementia are able to find certain destinations within the home environment if it encompasses supportive design features (e.g. architectural difference, signs, floorplan configuration, and perceptual access) (4, 26).

Strategies

- "The location of the residents' rooms and toilets is mainly determined by the layout of the circulation system. In addition, helpful elements such as door markings and signage, among others, can be included in the furnishing"(6).

Visibility:

- Toilet rooms should be visible from the program spaces. Toilet-related sounds and smells should be controlled without impeding visual access or privacy (11).
- Toilets that are close and easily recognized are most likely to be used; In contrast, toilets that are centralized or hidden demand greater physical and/or cognitive competence in order to be best utilized (37). Providing toilet rooms that are visible, are a short distance from activity areas, and are located along clear circulation paths, may promote independent use.
- To encourage ease of access and use of toilets consider curtains (e.g., leave curtains open until occupied) (39).
- Ensure contrast of toilet seats with the background wall to emphasize toilet seat and encourage use.

Cueing/Signage

- Utilize signs and pictograms in various locations to support the identification of the bathroom (4, 26). To ensure the entrances to these areas are visually distinctive, consider placing the cue at different heights or areas within the view of PWD. This difference in levels of sight will ensure those walking up-right, those with a downward gaze, and those in a wheelchair can see the cue (e.g. cue on the wall, bottom of the door or floor if necessary) (1,2, 4,6,17).
- In designing effective signage for wayfinding, PWD respond to signs with dark lettering, contrasted with a lighter background. Use signs on the floors that combine the word "Toilet" with short directional arrows are found most effective to encourage residents to enter and use toilet facilities in the living areas. At places where the resident must turn a corner, the cue word, "Toilet", should be repeated" (30).

- Symbols representing men and women are most suitable for persons with normal cognition and mild dementia. Pictures of the toilet bowl work best for persons with moderate dementia" (21).

Toilet Schedules/Functional Incontinence

- For PWD who wander, schedule toileting according to the PWD's personal patterns and routines while using cues to help them find the bathroom quickly (39).

Simplicity/Legibility/Reduced Distractions

- "Over stimulation for PWD may alter their ability to concentrate" (8). Research reveals higher instances of distracted and agitated behaviour in high stimulation environments such as bathrooms, as well as auditory distractions caused by hand-drying technologies (32).
- Remove or camouflage items in the washroom that resemble a toilet bowl (e.g. waste baskets and circular decorations to prevent inappropriate toileting).
- Consider removing other distracting items (e.g., mirrors, sink, paper towel holder, or soap dispenser) to encourage direct focus on toilet utilization (6).

Meaningful Experiences

RECOMMENDATION:

Use meaningful engagement to draw familiar life experiences, past roles and include everyday life events. Activities should be significant to the PWD and not just used as a diversion.

Rationale: People tend to gravitate to common spaces such as the dining room, living room, lounges, as well as corridors and entrances to other spaces in more communal settings. People also want to seek out social interaction, learn the daily activities, and alleviate boredom (33). Therefore, without anything meaningful on which to focus, many PWD explore inappropriate places such as co-resident rooms (16).

Physical design should support different experiences in different spaces. As Phinney, Chaudhury, & O'Connor state, it is important to create familiar social and physical environments that "allow activity to happen in a way that is spontaneous and flexible and provides natural cues for familiar activities…" (34).

Strategies

- Arrange seating areas that maximize visual access to other areas of the facility, including seating in the dining rooms, lounges, corridors and all other spaces. This will give indication as to what opportunities are available to engage in meaningful experiences (whether they are organized or informal experiences) as well as visual access to other purpose specific rooms
- Create purpose- specific rooms so people know what to expect when they enter them (1).
- Signage with specific colour or image associated with a specific activity or experience may be helpful in directing the person to the proper purpose room (15).
- As a positive cue, music, sound, or scent from an activity room can attract other residents into the space and encourage activity (16).
- Smells can be used to signal activities and to help residents identify specific rooms. The aroma of coffee or spiced apples from the kitchen or the warmth of a fireplace is often more effective than arrows or signs (28). The smell of bath soaps and lotions can signify the bathing room or "spa" which can be a meaningful and enjoying experience.
- Create smaller more home-like spaces that are accessible (e.g. the activity kitchen) with objects that create continuity with home or past life experiences within the spaces (e.g. baking and cooking tools, musical instruments, books, puzzles, plants, etc.). This allows for opportunities for spontaneous experiences (e.g. engaging in a specific activity or social interaction) (37).
- Day to day activities can also be meaningful to PWD as many have expressed the desire to help out in their communities with some of the daily activities/chores.
- Windows that show accessible outdoor spaces can provide cues to engage outdoors.
- With strategic plantings, accessible pathways, as well as public and private areas, the outdoor space can promote or provide opportunities for the PWD to engage in positive sensory stimulating experiences. This could include observing or interacting with flowers, plants, or others who enjoy the space. The outdoor space can also provide a landmark or wayfinding cue to the PWD (35).
- Consider activity kitchens which let people join in ordinary domestic tasks (e.g. setting tables, washing vegetables and drying dishes).

- Work areas can be created reflecting people's past interests and jobs. An "office area" with a desk, writing, pads and a typewriter may call on past memories and provide pleasing experiences.
- Create a regular schedule so daily life experiences are in the same place the same time of day (19).

Note:

- Meaningful engagement sets the stage for understanding and fulfills a need of the individual. For PWD, living in a care setting other than home, can create a sense of
- disorientation, loss, isolation, and boredom (30,31). Studies have found that engaging in meaningful and satisfying experiences can greatly add to the PWD's well-being. Thus, it is important to ensure that the design of the care setting and the visual cues employed (e.g., signage, landmarks, etc.) all help to direct and create opportunities for the PWD to engage in both informal/spontaneous and more formal/planned yet meaningful experiences.
- Functional destinations should be considered in meaningful experiences which may include kitchens, dining rooms, lounges, and activity rooms.

Do you have design considerations to suggest?

Please send us your feedback by visiting the brainXchange website and submitting your questions and/ or comments to the Design and Dementia Knowledge to Practice Recommendations online:

brainxchange.ca/design

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Other Helpful Resources

- **Access to Nature** http://www.accesstonature.org/index.asp
- **Person-centred Language** Guidelines Alzheimer Society of Canada, (2012). http://www.alzheimer.ca/on/~/media/Files/national/Culture- change/culture_person_centred_language_2012_e.ashx
- **Benbow, Bill** http://wabenbow.com/
- **Canadian Mortgage and Housing Corporation** http://www.schl.ca/en/index.cfm
- **Caspi, Eilon** http://eiloncaspi.com/
- **Dementia Design Info.com** https://www4.uwm.edu/dementiadesigninfo/
- **Dementia Enabling Environments** http://www.enablingenvironments.com.au/

Acknowledgements

The brainXchange Design and Dementia Community of Practice is pleased to share the following Dementia-Friendly Design Considerations document focusing on **Wayfinding.**

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The Knowledge to Practice Recommendations are living documents which will be continually edited and updated by the brainXchange Design and Dementia Community of Practice based on emerging quality evidence and the integration of both practice-based and experiential knowledge of those with lived experience.

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