



Design guidelines for specialty populations

Continuing Care Capital Program
Small Care Home Stream
2023 – 2024



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Overview

The following design guidelines provide considerations for some specialty populations. This document is not comprehensive and does not capture all the different types of specialty populations that may have unique home design needs. When designing homes for any specialty population, it is expected the needs and preferences of the residents will be at the forefront of the design choices and the designers will make use of the appropriate resources and design expertise that are applicable to the proposed resident population.

This document addresses some of the unique and special requirements for:

- Residents with Obesity
- Residents with Dementia and Related Needs
- Residents requiring Complex Care

Note: Throughout this document “shall” indicates required design features and “should” indicates preferred design features that are best practices though not required.

Residents with Obesity

Definition

Considerations must be made for the growing population of severely obese and bariatric individuals in Alberta. In general, bariatric individuals can be described by any of the following: overweight by greater than 100-200 lbs, a body weight greater than 300 lbs, and/or a BMI greater than 40. [AB Barrier-Free Design Guide, 2017] Individuals with obesity can vary in stature, width and weight. Weight can range up to 454 kg (1000 lbs) or more. The design of the home should take into account that significant variations can exist in the type, range and number of individuals with obesity who will use all or specific parts of their home. [CSA Z8000-18: 7.8.8.1.1 (2)]

- Average resident with obesity: 150 kg (330 lbs)
- Design target: 363 kg (800 lbs)
- Design drop weight (impact factor 1.4): 508 kg (1120 lbs)

Design Objective

Rooms for residents with obesity should be larger than regular resident rooms, but not so large as to give the perception of being overly modified.

The home should not assume a universal approach to the provision of bariatric needs in the home (unless the home is intended to only support bariatric residents). For instance, the purpose-built features that accommodate residents with obesity could be difficult for other populations to use (e.g., the frail elderly in particular might not be able to easily use a bariatric toilet or open wide/heavy doors). [CSA Z8000-18: 7.8.8.1.1 (4)]

Design Guidelines

Resident Rooms

- Rooms for residents with obesity should have 1 + ½ wide style doors, with the extra leaf operable and manageable by the resident. A door width of 1220 mm (48 in), in addition to a 305 mm (12 in) side leaf, should be used. This allows staff to transfer residents in stretchers or beds. [CSA Z8000-18: 7.8.8.1.3]
- A minimum 1800 mm (71 in) turning radius should be provided. [CSA Z8000-18: Table 11.1, 25b (e)]
- Clear space of at least 1500 mm (59 in) shall be provided on three sides of the bed. [CSA Z8000-18: Table 11.1, 24b (d)]

- Where lifts are used, additional clearance is needed to accommodate use of the lift and an expanded-capacity wheelchair as well as space for staff to help a person with obesity transfer from bed to wheelchair. Mobile lifts require more floor space than overhead lifts to accommodate the lift footprint. [FGI 2018 Residential Facility Guidelines, 3.1-2.2.2 b]
- The ceiling in a bariatric suite should be high enough and structurally capable of supporting a ceiling lift and floor to ceiling transfer poles if required by the resident.
- Floor mounted rails, placed strategically from bed to toilet, should be considered as they facilitate increased independence with toileting.
- The amount and design of space should consider the need for oversized furniture and storage of oversized equipment, as well as additional space to allow for care by multiple caregivers when needed. [CSA Z8000-18: 7.8.8.2.1]
- A fan with a resident-operated control should be provided. [CSA Z8000-18: Table 11.1 24b Advisory (d)]
- Water and drain connections for a portable dialysis machine should be provided. [CSA Z8000-18: Table 11.1 24b Advisory (g)]

Washroom

- The washroom door shall be a minimum of 1220 mm (48 in). [CSA Z8000-18: Table 25b, (o)]
- Toilets should be floor mounted. Wall mounted toilets should not be used. [CSA Z8000-18: Table 11.1, 25b (j)]
- The bariatric toilet shall be capable of supporting 454 kg (1000 lbs) [CSA Z8000-18: Table 11.1, 25b (g)]; toilet seats should be extra wide. Note: Bariatric toilets are deeper and wider, and may have a higher seat height, making it difficult for the bariatric individual to use, especially if of shorter stature. [AB Barrier-Free Design Guide 2017, p.151]
- Use a bariatric commode over a standard toilet, if not using a bariatric toilet. The seat height can be adjusted to fit the individual's needs. A floor-mounted toilet with an unattached flush tank is more flexible to use with various bariatric commodes. [AB Barrier-Free Design Guide 2017, p.151]
- There shall be clear space on each side of toilet to accommodate a staff member on each side of the resident. A clear space shall be provided on one side of at least 1500 mm for transfer use. [CSA Z8000-18 Table 11.1 25b (i)]
- A floor mounted wheelchair accessible sink or surface mounted wheelchair accessible sink with extra support rated for 454 kg (1000 lbs) should be provided. [CSA Z8000-18: Table 11.1, 25b (m)]
- A turning radius of 1800 mm (71 in) is required for individuals with obesity using a wheelchair. [CSA Z8000-18: Table 11.1, 25b (e)]
- Walls should have extra reinforcing to allow for mounting grab bars in multiple locations around the toilet and shower area.
- Toilets shall have two drop-down grab bars. Bariatric grab bars shall be able to withstand 454 kg (1000 lbs) downward force and shall meet accessibility standards. [CSA Z8000-18: Table 11.1, 25b (k)]
- The length of rear wall grab bars should be 1120 mm (44 in). [FGI 2018 Residential Facility Guidelines: 2-4.2.2.9.3]
- Toilet tissue dispenser should be mounted sufficiently to allow ease of access and not interfere with grab bar use.
- Avoid enclosing walls to allow for ease of access and assistance by caregivers if needed.
- The shower area shall be open to the toilet area and have a minimum dimension of 1500 mm x 1800 mm (59 in x 71 in) is recommended. [CSA Z8000-18: Table 11.1, 25b (l)] Shower controls should be mounted on the sidewall of the shower.
- The resident assisted bathing room should have a tub that is capable of accommodating a resident with obesity and allow easy access for staff to provide bathing assistance.

Doorways/Corridors/Elevators

- A bariatric path of travel for the public shall be provided from the building entry(s) to all rooms and spaces used by residents with obesity. Within that path of travel, doors (including elevators) shall have a minimum width of 1118 mm (44 in). A larger door width can be accomplished by use of unequal-leaf swing doors. Other ways to maximize door clearance include the use of folding doors and off-set hinges.
- In locations adjacent to bariatric rooms where there could be a need for frequent transfers of residents with obesity, corridors and spaces should allow a minimum clearance of 1800 mm (71 in). [CSA Z8000-18: 7.8.8.1.6]
- Swing doors for residents with obesity shall have a clear floor area beside the latch edge that extends the full height of the door of 940 mm (37 in) on the pull side and 640 mm (25 in) on the push side. Sliding doors for residents with obesity shall have a clear floor area beside the latch edge that extends the full height of the door of 600 mm (24 in) on both sides of the door. [CSA Z8000-18: 7.8.8.1.4]
- Corridors and hallways should be wider to accommodate larger girth and equipment.
- Elevator door clearances should be as large as possible [minimum of 1200 mm (47.25 in)]. [CSA Z8000-18 7.8.8.1.2] The interior dimensions should allow for a larger turning radius of wheelchairs and the transportation of a stretcher with two caregivers (i.e., emergency services).

Entrance and Ramps

- Ramps should have a minimum unobstructed width of 1220 mm (48 in) to allow for larger wheelchair widths and sufficient clearance space for individuals to propel their wheelchairs. [CSA Z8000-18]
- A maximum gradient of 1 to 20 should be provided due to the increased weight of the individuals with obesity and the impact on self-propulsion and caregiver effort when pushing the wheelchair. [AB Barrier-Free Design Guide 2017, p.153]
- A minimum 1500 mm x 1500 mm (59 in x 59 in) level area should be provided where a ramp makes a 90° or 180° turn and at intermediate levels as required in longer ramps. [AB Barrier-Free Design Guide 2017, p.153]
- Curb cut outs and openings should be at least 1220 mm (48 in) wide to accommodate larger wheelchair widths. [CSA Z8000-18]
- If the door swings open towards the wheelchair user, increasing the clear space on the latch side of door to a minimum 940 mm (37 in) [CSA Z8000-18: 7.8.8.1.4] should be considered, to allow for an increased turning radius of a larger wheelchair.
- Load values for handrails should be increased to withstand the increased weight of individuals with obesity. Handrails should withstand a minimum of 454 kg (1000 lbs) applied at any point and in any direction and a minimum uniform load of 340 kg (750 lbs) applied in any direction to handrails located outside of houses. [AB Barrier-Free Design Guide 2017, p. 153]

Furniture

- Bariatric furniture rated to 454 kg (1000 lbs) should be available for use by residents and visitors with obesity in common areas throughout the home (i.e., dining room, lounge areas, etc.).
- Bariatric furniture should be selected to mix well with the look and design of standard furniture and should offer choice between chairs with armrests, chairs without armrests and loveseats.

Residents with Dementia and Related Needs

Definition

Designing buildings that support people with cognitive impairment empowers them to live through the progression of the stages of dementia with an enhanced level of comfort and dignity. Comfortable, unobtrusive, person-centred and homelike design have all been shown to contribute improved quality of life for persons with dementia and other forms of cognitive impairment.

While the design objective and the design guidelines outlined below may be beneficial for all residents within a home, they have particular importance for residents with dementia and other forms of cognitive impairment.

Design Objective

The environment facilitates resident independence, autonomy, choice, orientation, socialization and participation in familiar and enjoyable everyday activities. It also supports staff to interact with residents in a natural, homelike, calming environment. The more residential the character of the building, the more control residents experience over their environment. The more control the resident feels they have, the higher the likelihood that they will assert their fullest range of function and ability.

The overall character of the space is as residential and homelike as possible. Living in a homelike environment increases the probability that the resident will become familiar with their surroundings and interact with others in a meaningful way to maintain their independence and abilities.

The overall scale of the space should not be overwhelming; rather, functional and flexible in its use and in scale and proportion to rooms found in a large family home. A mixture of a larger, congregate activity space and smaller, type spaces accommodate small group interactions and sensory reduction. Emphasis is placed on creating a 'family-like' environment typically including small group interactions.

The design also reduces resident confusion and orients them to the time of day through optimal natural light and to their surroundings through a simple and understandable design and the presence of familiar rooms/activities.

Design Guidelines

Sensory Changes

Sensory changes are common in the elderly and in particular, persons with dementia. The senses help to interpret ones environment and as such must give clear messages. The following summarizes some common sensory changes in the elderly and implications for facilities.

Vision

- Steps should be taken to ensure that lighting is not overly bright (creating glare) or overly dim (creating shadows). Aging eyes need more light and have a reduced capacity to discern between varying levels of light intensity. Natural or flicker-free light should be utilized wherever possible. Sconces, which produce various lighting patterns, are not desirable in areas used by residents with dementia.
- Changes in flooring elevation, or perceived changes in flooring elevation caused by colour extremes or patterns can result in falls. Boldly patterned flooring or bright/shiny flooring should be avoided. Residents with dementia will often avoid walking in rooms with visually confusing flooring quickly leading to a reduction in mobility. [CSA Z8000-18: 8.9.3.1.2]
- The reduced ability to perceive slight differences in lighting, shade, and hue experienced by residents with dementia require an increased emphasis on contrasting colours to assist residents in discerning walls from floors, door handles from doors, toilets from bathroom walls and floors, etc. Contrasting colours utilized in toilet seats, door handles, handrails, and other architectural features often assist residents to accurately identify those elements. [CSA Z8000-18: 8.9.3.1.5]
- In buildings where resident elopement is problematic, non-contrasting architectural elements assist in reducing the likelihood of elopement. Exits can be disguised with design features that make the fixture/exit invisible to the resident.
- All furnishings, wall colours, flooring, and window coverings should be chosen from colours in warm, mid-range colours. Beiges, peaches, and pale pinks and blues are perceived as white and indistinguishable, while harsher dark colours such

as chocolate browns, navies, and blacks are all seen as black. Warm mid-range colours are comforting and discernible; some report red and yellow as “best perceived” colours.

- Mirrors, shiny appliances, and excessive use of glass should be avoided. Shimmery surfaces produce glare, which impedes visibility. For some with dementia, mirrors may cause confusion. Accordingly, they should have the capacity to be covered or removed.

Auditory

- Furnishings should be chosen to assist in the reduction of excessive noise – fabrics, window coverings, and floor finishes should be selected from those that absorb noise rather than amplify it. Hearing in the elderly tends to diminish and ordinary sounds may cause confusion when too many sounds are presented together. Efforts should be made to dampen extraneous noise to assist residents in processing auditory information.
- The use of overhead paging systems should be avoided.
- Music and television should be used selectively in common areas.
- Equipment and carts should utilize rubber tires.

Tactile

- The sense of touch also diminishes with age. This requires more contrast in textures that are meant to orient the resident to their surroundings.

Orientation and Familiarity

- Resident bedroom design should respect the individuality of each resident. Residents and families should be encouraged to personalize the resident’s room, as much as possible. Familiar surroundings assist in orientating residents to their living environment. For example, personal items such as a favourite ornament or personal photos may be displayed in a small curio window outside each resident’s bedroom to assist in orienting the resident to their own space.
- Enlarged photos of residents at meaningful times in their lives (weddings, graduations, births, working) may also be a source of personal comfort to the residents.
- Built in shelving units, hutches, or desks should be considered for displaying interesting collections of objects within residents’ reach. Rummaging through collections of fragrant, textured, or visually attractive objects provides opportunity for reminiscing and meaningful conversation.
- A continuous looping corridor is not always a successful wandering path. Residents with some forms of cognitive impairment are often walking with a purpose. In these cases, a loop could reinforce the frustration of not reaching that purpose and promote continuous wandering. The provision of landmarks/focal points along the route can provide different views to enhance the wandering experience and provide positive stimulation to the resident. [CSA Z8000-18: 8.9.2.3.6] Avoid dead-end corridors ensure there is at a minimum a turning radius at end of corridors.

Safety

- The design should create support spaces that are invisible to residents to ensure residents do not access them and put themselves at risk. For example, doors into support rooms should have the same colour as the surrounding walls. The design should also allow for optimal visibility by staff into several congregate resident spaces, to ensure optimal safety, yet without compromising privacy.
- Residents with dementia should be housed on the ground level to better enable emergency evacuation and emergency access.

Outdoor Spaces

- Residents should be allowed unrestricted access to the outdoors independently, and in most seasons/weather types. There should be shaded areas protected from the elements and open, yet secured areas. Enclosed gardens can provide stimulation as well as an additional distraction when behaviors escalate. The space should be inviting and representative of a residential garden, but not overly large like a public park.
- A variety of flowerbeds and gardens, both ground level and elevated should be considered. Natural plants allow both sensory stimulation as well as endless opportunity for meaningful engagement in activities enjoyed by most residents. Lists of toxic and non-toxic plants should be consulted when designing an outdoor space.
- Outdoor spaces shall provide opportunities for residents to engage in/observe social activities and familiar everyday activities. For example, the area may include:
 - a clothesline to hang laundry;
 - comfortable seating (i.e., does not absorb heat);
 - a bird bath to observe birds;

- an area to pile firewood/logs, etc.;
- shaded area; or
- circuitous pathways.
- Fences should be attractive and natural. Trees, shrubs, and climbing or flowering vines will disguise fences reducing the enticement to explore elsewhere. Chain-link or plexi-glass fences are an invitation for elopement as occurrences in the distance can attract the resident's attention.
- Several seating options should be available, scattered along a continuous walking path, to encourage purposeful wandering. Walking surface should be smooth to avoid tripping or stumbling hazards.
- Areas of indirect sunlight should be readily available. The use of gazebos, trellises, canopies, or umbrellas will allow residents to enjoy the outdoors without the glare of direct sunlight. A "back porch" environment is the goal.
- Gates should be avoided and if required they should blend into the overall fence to be invisible to residents.
- Interesting objects/features should be created within the centre of the space to draw attention away from the periphery.

Wayfinding and Signage

- Major characteristics of persons with Alzheimer's and other dementia are lack of attention span and an inability to orient themselves in the physical environment. To address this, the physical environment should provide discernible landmarks and wayfinding cues and information to aid in navigation from point to point. [FGI 2018 Residential Care Facilities: A2.4-2.2.12.3 (I)]
- Consideration should be given to provision of the following wayfinding elements in dementia units:
 - Landmarks: Design elements can provide clear reference points in the environment (e.g., a large three-dimensional object, outdoor view, large picture, or other wall-mounted artifact).
 - Signs: where appropriate, large characters and redundant word-picture combinations should be used on signs. [FGI 2018 Residential Care Facilities: A2.4-2.2.12.3 (I)]
- Residents with dementia require colour to be associated with a symbol to be recognizable. They will not automatically associate colour alone with a specific meaning. [FGI 2018 Residential Care Facilities: A2.4-2.2.12.3 (I)]
- Colour may be used to distract attention from spaces. For example, mechanical doors and doorframes that match the finish of the surrounding walls are less likely to draw a resident's attention to the mechanical room. [FGI 2018 Residential Care Facilities: A2.4-2.2.12.3 (I)]
- The wayfinding plan shall include redundancy and an overlap of elements to assist people with different cognitive strengths. Generic pictograms can be used for pathways and spaces that are for resident common areas such as lounges and dining rooms. [FGI 2018 Residential Care Facilities: Annex C]
- Meaningful methods of wayfinding (rather than the written word) through illustrations or objects should be considered. For example, large comfy quilts on sofas to encourage gathering in a congregate activity area, a photo of a toilet on a shared bathroom, or large plants near the doors to the garden may be more helpful in orientating the residents.

Resources

The Eden Alternative - <http://www.edenalt.org/>

Supportive Pathways - <http://carewest.ca/dementia-care-training/>

The Green House Project - <https://thegreenhouseproject.org/resources/research/>

Dementia-Friendly Environments - <https://www.health.vic.gov.au/ageing-and-aged-care/dementia-friendly-environments>

Residents Requiring Complex Care

Definition

Complex care can be used to describe several populations with overlapping health needs. Complex care may be generally defined as a program of services provided by a team of health care professionals to persons who have chronic, complex medical conditions requiring specialized care (chronic ventilator/respiratory respite/respiratory end-of-life programs, brain injury with severe and unpredictable behaviours, and enhanced long-term care for residents with complex or specialized needs). [CSA Z8000-18: 8.8.1.1.1]

Design Objective

The first step in designing a physical environment is to take the time to understand the needs and preferences of your resident population. It is also important to assess and minimize risk by understanding the risk of resident self-harm in the setting as well as risk of harm to staff.

The built environment shall be designed to maximize the dignity of residents while facilitating appropriate levels and models of professional care culminating in the establishment of a therapeutic, supported, and residential-style environment. [CSA Z8000-18: 8.8.2.1.1]

The home shall be designed to facilitate independence-oriented care, focusing on health and welfare maintenance, rehabilitation, and the achievement of an optimized lifestyle. Sufficient and subtle support should be provided to enable each individual resident to function at the highest level of independence. [CSA Z8000-18: 8.8.2.1.2]

The ambience of the home should be as close as possible to residential-style, consistent with the need to provide care, to as many residents that will live in the home for a number of years. Care and support shall be provided in a clearly defined, identifiably domestic setting to minimize confusion. This minimizes the need for residents to relearn a new spatial grammar within the home.

Design Guidelines

Resident Room

- The bed area for a resident requiring ventilation care is 18.2-20.7 m².
- The bed area for a resident with a brain injury is 20.7 m². [CSA Z8000-18: Table 8.8, 1].

Washroom

- A larger washroom may be provided to accommodate a 1.8 m turning radius for larger, more complex chairs to be provided to residents. Assume 6.5 m² for a 3-piece washroom if the larger turning radius is required.
- An alternative washroom configuration in lieu of the 3-piece washroom with shower stall may be planned. Washroom options and sizes without a 1.8 m turning radius should be:
 - 3-piece washroom – traditional (sink, toilet, and tub with shower) – 7.0 m²
 - 3-piece washroom with hand-held wand – 4.6 m²; and
 - 2-piece washroom – 4.6 m²
- In addition to the required access to one side of the toilet, space for staff to assist should be provided on the opposite side. [CSA Z8000-18: Table 8.8, 1].

Fixtures and Furniture

- Fixture selection shall consider safety and avoid fixtures that can be used as weapons or for self-harm.
- Consideration for selecting fixtures and furnishings that resist damage and are easily replaced and repaired.

General

- Indoor and outdoor common areas that encourage social interaction, facilitate staff observation, and have a mix of flexible seating arrangements shall be provided.
- Home design shall maximize use of natural light and views of nature.
- Design of home and selection of materials should seek to minimize noise to support residents who are sensitive to stimuli.
- Design should consider if a staff respite space is needed.

Note: the earlier section on “Residents with Dementia and Related Needs” provides design strategies that are likely relevant to many populations requiring complex care.

Resources

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