

Wandering Residents

A common occurrence in many nursing homes is the overwhelming urge of residents with varied neurological problems to wander - frequently into unsafe and insecure areas.

The term 'wandering' covers different types of behaviour, including aimless movement without discernible purpose, and is associated with a variety of negative outcomes. The aetiology of wandering is poorly understood and evidence/effectiveness of pharmacological/non-pharmacological interventions is limited. It is possible, however, that management of coexisting psychopathologies and facility design features (the subject of this presentation) can help to ameliorate this 'difficult to manage behaviour'.

By William (Bill) Benbow

Reliable roaming in dementia care

Designs for safe walking

August 14, 2011, Ms.L., an 83 year-old nursing home resident with dementia, walked out of Rose Garden Villa long-term care home in Ontario and threw herself into the Detroit river. Her family filed a \$1.2 million lawsuit (Sacheli, *Windsor Star*, Dec.29, 2015).

Wandering and resident safety

Canadian Nursing Home, in the June/July, 2016 issue, addressed the issue of 'Managing Wandering and Elopement, pointing out that dozens of cognitively challenged residents are injured or die annually as a result of wandering. That article provided

an overview of causes of wandering, including unmet needs; it also raised several issues such as staff training to manage residents' need to wander and in particular. . . "how will the facility keep the wandering loved one safe" (Tilly & Reed, *News Report*, 2016; Benbow, CNH; 2016).

Defining the issue

The goal in this submission is to explore physical design options for 'safe walking/wandering,' which will be referred to as 'roaming,' in order to counteract the 'problem behaviour' label of 'wandering'.

Walking, or roaming with some urgency

(but where it is difficult to discern purpose), is a common behaviour of persons with dementia - particularly in the middle stage of the disease.

High risk behaviour

A Japanese review that focussed on perception and memory found that roamers fall three times more often than non-roamers (Cipriani, et al., 2014).

A U.S. source indicates that, although there are no reliable estimates, some experts say that more than half the people with dementia will 'roam' or exhibit exit-seeking at some point. Because of wayfind-





Before

After

ing difficulties, this behaviour is challenging and can be a high risk for injury (Tilly, 2015).

A Chinese review points out that about 60% of people with dementia display elopement behaviour and that it has a high risk of death (Gu, 2015).

A New York paper, addressing roaming and elopement, makes references to studies that indicate that up to 31% of nursing home residents with dementia roam at least once and that roamers have double the risk of fracture compared with residents who do not roam. For those who elope there is a 25% chance of death if they are not found within 24 hours, with deaths attributable to hyperthermia, dehydration and drowning (Lester, 2012).

A Missouri study reports that, according to reviews of claims against nursing homes, 70% of elopement incidents end in resident death (Aud, 2004).

Considerable risk

A related U.K. study suggests that the danger of elopement and getting lost may most likely occur in a brief period of about two years in the course of the disease. The author, using Missing Person Police Reports, concluded that, for people with dementia, getting lost is a low frequency event - but, for a small minority, the risks are considerable. This increases the risk

of care-home admission and leads many caregivers to resort to locked door units in order to provide a safe environment (White, 2015).

Exploring harm reduction approaches:

• Subjective barriers

Facilities have found that restricting residents' opportunity to roam results in frustration and agitation and sometimes aggression towards staff and other residents.

Nursing homes have developed a number of approaches to mitigate potential harm. It would be particularly helpful to have evidence-based studies to guide us

in selecting best practices. However, Robinson searched the literature for studies of non-pharmacological interventions to reduce wandering in dementia and concluded that as yet there is no high quality evidence to recommend any particular intervention with the exception of some weak evidence for exercise (Robinson, et al., 2006).

Similarly, a Cochrane Review updated to 2009, found no scientific evidence (randomized controlled trials) that subjective barriers reduce wandering (Price, 2009).

Despite this lack of rigorous scientific research there are observational and experience-based studies which do point to effective ways to promote safer walking.

Lin Gu, M.D., R.N., of the School of Nursing, Putian University in Fujian, China, analyzed several of these wandering behaviour studies, including:

- use a full length mirror placed in front of the exit door which has been shown effective in reducing exiting from 76 to 35%;
- camouflage on exit doors was found to be successful in discouraging exiting behaviour; and
- floor patterns, such as a strip or black mat in front of an exit door, was useful with some (Gu, 2015).

• Environmental design

Tilly recommends using 'environmental design' such as:

- eliminating the 'over-stimula-



tion' of visible doors that people use frequently;

- using signage for wayfinding aids;
- providing a safe uncluttered path to roam with points of interest and places to rest;
- and, disguising exit doors with murals and masking on doors.

Tilly points out that views of outdoor traffic through doors and windows can cue exit behaviour. She includes an appendix of techniques used in several U.S. states, including:

- the use of crowd-control stanchions like those used for queuing in front of exit doors, and stop and U-turn signs;
- labels on important doors, such as bathrooms;
- disguise doors to look like the adjacent wall;
- camouflaging doors leading to unsafe places, fabric barriers attached with Velcro, black mats, frosted glass on doors, silent alarms, and the provision of safe indoor and outdoor roaming places (Tilly, 2015).

• Doorway disguises

The *Alzheimer Knowledge Exchange* has produced a pamphlet on 'Doorways' that offers several recommendations and strategies for adapting doorways to restricted areas and exit doors, and for drawing attention away from exit doorways.

In addition to camouflaging the actual exit doors, the key pads, handles, panic bars and knobs can be masked with a cloth apron of the same colour. Large bold grid lines, a large STOP sign, or a sign that states "this is not your room," can be used to decrease access to off-limit rooms.

Blinds or translucent film (semi-transparent) can mask glazing in doors. It suggests an important strategy in which to lead persons with dementia away from high traffic exits using positive cueing or redirection with other interesting stimuli such as aquariums, aviaries and seating nooks distant from exits.

Exit doors can be located out of sight of residents, with doorways to safe indoor and outdoor areas visually enhanced.

Fire exit instructions should be placed above eye level as persons with dementia tend to focus on the lower half of the visual field. Separate service corridors and access are useful and staff and visitors should be encouraged to use less conspicuous en-

trances (brainXchange, 2016).

Dr. Colm Cunningham discusses some problems with the practice of disguising doors in residential facilities in an article with comments from Professor Mary Marshall. Both express some concerns with residents being confused in response to certain camouflage techniques. They give the example of someone trying to reach for a book on a bookshelf image or sit on the illusion of a café chair.

Instead they recommend painting exit doors the same colour as the walls with a handrail across the door and some nearby attractive area to distract people. They also prefer exit doors to be inconspicuous and not 'in your face' at the end of corridors (Cunningham, 2015).

• Camouflage approaches

Brian and Karen Romeril of "Creative Art Co" in St. Marys, Ontario, have extensive experience with the camouflage approach. For several years they have provided over 200 artistic camouflage door treatments. They have had considerable success with this methodology and have had no requests to alter their work in response to upset or confusion in a resident.

The Romerils see the purpose of this type of exit diversion' as:

1. To dissuade or distract roamers from an exit door where they may linger with hopes of slipping out;
2. To reduce anxiety when a perceived door triggers an impulse to exit; and
3. To create the 'look and feel of home.'

Interestingly, in the Romeril's experience with more than 80 Dementia Care units, they found that the number of residents who habitually and relentlessly visit the exit door with a view to leaving is actually quite small: usually 4 or less. For this core group of residents, however, the danger of elopement is great and needs to be mitigated.

They also found that it is best to use artistic designs that show contents appearing to be behind glass or wooden fretwork in a locked cabinet to avoid stimulating residents to attempt to rummage in the illusion.

The Romerils also avoid full landscapes on doors as this might stimulate the resident to attempt to enter the illusion.

Similarly, they avoid 'below the waist'

landscapes and floor level potted plants to dissuade male residents from 'voiding'.

Exit Doors that are recessed, and/or have heavy hardware, do not lend themselves to being painted out to match surrounding walls. Only doors that are flush with the wall lend themselves to simple "paint away" treatments. When the door is recessed (usually 4 - 6 inches), it becomes hard to minimize because the shape of the door is emphasized within this framework.

In rare situations where the door can be easily painted to blend in, they recommend painting a chair moulding rather than the extension of a hand rail which the resident might mistakenly try to grab for support.

They also have a window treatment that allows one-way visual into the unit.

One of their more interesting door treatments is the variety of vinyl overlays available to individualize resident room doors (Romeril, personal communication).

• Locked units

In dementia care facilities 'Exit Controls' have become the most reliable solution to ensure the safety of residents with dementia and avoid costly law suits based on claims of negligence.

Initially, Special Care Units for dementia residents developed twenty-five years ago as closed units to accommodate the small percentage of long-term care residents that were at risk. Facilities rarely had locked or controlled front doors. Over the years the proportion of care residents with dementia has grown to 75% or more. Consequently, most Households and the facility main entrance now have exit controls in order to provide safe care and prevent elopement.

At the same time, the size of Households has evolved to much smaller units in many jurisdictions in the range of 9 to 24 residents. This has resulted in much smaller amenity areas and much reduced opportunities to roam.

Initially, Special Care Units accommodated roamers with 'race track' roaming paths which, over time, evolved into a physical design that encouraged meaningful walking with destinations and rest stops.

With Households decreasing in size, these indoor roaming paths have become costly to maintain for some individual Households. In addition, with the dramatic increase in dementia populations, facilities



Problem: Resident difficulty in finding one's room when all doors look alike.



Solution: Make resident's doors unique as a wayfinding tool as well as for the 'feeling of ownership. A name plate and/or special ornament can enhance the feeling.

have found it increasingly difficult to porter residents from their small Households to multipurpose areas and the main ground floor amenities. More and more residents have to be taken to programs in their small Households. Opportunities for 'out of Household' activities are limited by the shortage of staff and volunteers. Similarly, with multi-story buildings, easy access to outdoor areas is further limited.

Liberating the roamers

All the 'harm reduction approaches' discussed have led to very limited roaming opportunities for dementia residents, resulting in increased frustration and agitation. We are now hearing calls for "liberating the wanderers."

Dr. Johanna Wigg, Ph.D., a social gerontologist and independent consultant, has compared two facilities: one with locked doors and the other with unlocked.

The former, Pine Tree Place, uses key-coded entryways on each Household as well as a locked front door, while the latter, Oceanside Vista (aka., Vicarage By The Sea), uses door motion detectors to alert staff when residents leave. When alerted, staff join the resident to ensure their safe return.

Wigg recommends the use of unlocked facilities with motion detectors and/or tagging of residents to free them from the frustration and anxiety of being cooped up and to encourage staff to be more responsive to residents' needs.

She does acknowledge that changes in staff/resident ratios must also increase for staff to accompany residents. (*Pine Tree had a staff/resident ratio of 1 to 8, while the ratio for Oceanside was 1 to 4.*)

Wigg (2010) notes that most of the time the favourable ratio at Oceanside allowed staff to join individuals who wanted to roam,

although staff expressed concern when two or three residents exited at the same time.

Roamers and technology

Dr. Alan Power supports "liberating the roamers" through the use of technology, such as alarmed doors and GPS tracking devices. However, he too acknowledges that "for communities that cannot increase staffing..., such staff ratios may not be achievable, and those without adequate flexibility and collaboration among staff will be hard-pressed to provide the one-on-one attention needed at times" (Power, 2016).

Some of this writer's responses from the field clearly indicate that one caregiver alone may not be sufficient to persuade an eloper to return to the facility; it may require two or three - and occasionally police assistance. (Personal communication, F. Sudbury, 2017).

Some observers also raise the legal and ethical issue of 'involuntary confinement': nursing homes need to have clear guidelines, policy and procedures in place. Family support and involvement are essential in determining the degree of supervision required and in managing risk.

In a study of families' and professional caregivers' views on monitoring residents, Ruth Landau of the Hebrew University of Jerusalem points out an interesting finding: "Caregivers give preference to residents' safety more than autonomy when they themselves are responsible for the residents; whereas, when residents are the responsibility of other caregivers, they give preference to residents' autonomy more than safety" (Landau, et al., 2010).

Alarms on exit doors

Myra Aud found that the use of alarms and monitors on exit doors, although a popular intervention to prevent elopement, is fraught with danger. In her study of 62 elopements, she found that alarms frequently failed to be dependable:

- Residents interfered with alarm use (removed sensor tag);

- Staff could not hear the alarm when sounded (in tub room or ensuite);
- Staff did not respond to the alarm (assumed someone else would);
- Alarm was not turned on at the time of the elopement incident (difficult to reset);
- Alarm not working (maintenance issues) (Aud, 2004).

Louise Brown, Manager of Czorny Home in Surrey, B.C., agreed during an interview that there is the risk of care staff becoming complacent to the “door alarms,” and becoming irritated with the distraction and expectations at having to redirect the same person or people day after day (Personal communication, 2017).

GPS tagging

Tagging and tracking devices have their limitations. A Dutch study reported that 91% of residential care homes in the Netherlands were using some form of surveillance technology to supplement or replace human supervision and as an alternative to the more physical forms of restraint traditionally used to manage roaming.

The study looked at two facilities that used electronic bracelets and GPS (Global Positioning System) tags and found that the introduction of new technology could create new risks such as:

- false-positive alarms;
- increased alarm fatigue among staff;
- residents removing tags/bracelets; and
- equipment failures.

Often staff would turn troublesome alarms off and generally did not trust the technology. This resulted in keeping residents in close proximity and frequent locking of doors.

Staff complained that they were often too busy to respond to alarms and that they could not depend on the technology to keep residents safe.

The researchers concluded that such technology should be used as an aid - not a substitute (Niemeijer, et al., 2014).

A related Australian study found similar results, warned of a false sense of security and concluded that there is little evidence to support the widespread recommendation that GPS devices are an effective intervention to prevent the risk associated with elopement (Hayward, 2014).

Designing a safe environment

Based on the limitations of current technology and staff resources, this writer believes the best solution to ensure resident safe walking is still a well-designed secure environment, i.e., locked doors combined with interior layouts that utilize good way-finding aids, camouflaged doors to unsafe areas, redirection away from exits, and an enhanced roaming area.

Good design for dementia care has been covered in several earlier design articles in *Canadian Nursing Home* by this author (Benbow, 2013). Basically, layouts need to be simple, with few if any changes in direction. Amenities should be co-located in a central location within the Household and easily visible from resident rooms.

Wayfinding cues and landmarks should assist residents to locate amenities, washrooms, etc. Exit doors are best out of the way while doors to safe areas, such as amenities and secure outdoors, need to be enhanced, inviting and visible. Outdoor access should be easily accessible from each Household.

Lighting needs to be enhanced to ‘senior levels’. Noise needs to be mitigated. Doorways and corridors should be accessible, leading to meaningful areas and without dead ends.

Resident rooms ought to be single occupancy to allow for privacy, and amenity areas should be varied to allow for quiet times, as well as social gatherings.

Households are best with 9 to 24 residents to allow for reduced noise and confusion, with provision made for a variety of meaningful activities when planned.

Security zones

To compensate for the smaller Households with reduced roaming opportunities, this writer suggests linking two or three Households together with a shared multi-purpose/activity area - all within a Neighbourhood security zone, preferably on the same floor. A good example of this can be seen in Arrowsmith Lodge in Parksville, B.C. where two to four Households share an adjacent Activity Area.

Deanna Smith, Administrator of Arrowsmith Lodge, finds this layout, with a centrally located activity area, works quite well. She notes that Arrowsmith Lodge has found a Snoelzelen or Sensory Room

quite successful, as well as Activity Nodes or Life Skills Stations spread along the walking corridor.

In addition, each pair of Households share a secure outdoor courtyard. Sharing an adjacent activity and outdoor area reduces pressures on staff in terms of portering to distant multipurpose amenities on other floors or main street areas, while allowing residents to roam unaccompanied within a safe and interesting area (Deanna Smith, personal communication, Arrowsmith Lodge).

Dr. Power supports this approach in order to promote the ability to walk freely within a larger environment, i.e., by alarming/locking only the outer doors of the complex rather than individual living areas, or by combining adjacent living areas into a ‘shared security zone’. Dr. Power maintains that even shared courtyards can work in this way (Power, 2016).

Fiona Sudbury, Director of Resident Services, The Kiwanis Pavilion, Victoria, B.C., agrees that only a small percentage of residents actively seek exits - but safely caring for those that are regularly focused on getting out can be very challenging. She finds that camouflaging exit doors can help and can be artistically done, especially as they make a space more attractive and less institutional. Sudbury would prefer facilities designed like Hogeweyk in Holland, where households are not secured and residents can easily get out of their houses into the large communal courtyard spaces (Personal communication, 2017).

Hogeweyk is an excellent example of using a Security Zone approach, to wit, the entire perimeter of the facility is secured with a locked front door, while the interior layout of 23 Households and courtyards, including amenities, is available for unaccompanied roaming by the 152 residents, all with dementia. The complex includes a restaurant, super market, bar, theatre and gardens. Making such a large security zone work requires sufficient staff and volunteers to periodically redirect residents to Households for meds and meals.

GPS tags might work in this approach in order to locate residents for specific activities; and attention would need to be paid to Wayfinding cues and landmarks to assist residents in finding their way back to their Households.

This writer suggests colour-coding House-

holds with distinctive entrances, as in the Czorny facility in Surrey, B.C. Residents could also be equipped with matching colour-coded bracelets to aid staff and volunteers in redirecting those residents who wish to return to their Households.

Conclusion

The impulse to walk or roam is a common urge for those with dementia - particularly in the middle stage of the disease. This need, if restricted, results in frustration, anxiety, and agitation. (See top of page 22).

A number of subjective design approaches have been suggested that can dissuade exiting behaviours and redirect residents to safe areas. These design approaches include, for example, the camouflaging of doors to unsafe areas and providing interactive and meaningful activities such as Life Skill Stations. As the Romerils of the Creative Art Co. state: "the key is to gently redirect and mitigate anxiety".

Despite the increase in technological aids, such as alarmed doors and resident tagging, locked doors are still the most reliable means of ensuring safety for roamers.

Architectural and Interior Design can ameliorate the limitations of small Households by providing meaningful and safe walking/roaming opportunities within security zones. These can be the size of two or three Households, combined into Neighbourhoods, with a shared adjacent multipurpose/activity area or, as large as the whole facility, such as Hogeweyk, with a secure perimeter and provision for additional wayfinding assistance.

Nursing homes must develop a plan of care to meet their residents' needs which includes the support of roaming - with the condition that this roaming must be within a safe environment.

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