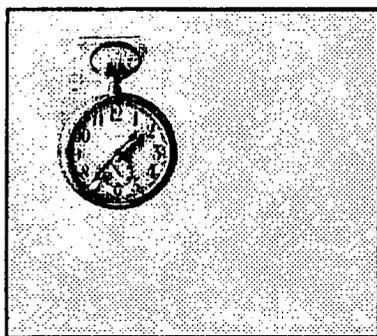
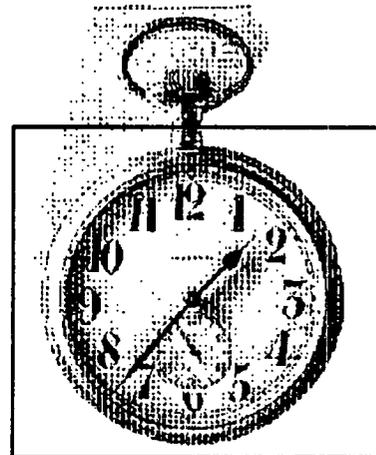
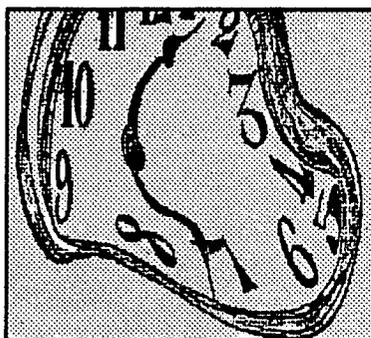
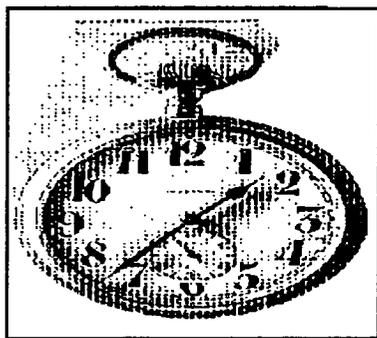


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# DEMENTIA PATIENTS IN INSTITUTIONS:

A Review of Recommendations  
and Research Concerning  
Their Design, Staffing and  
Programming Needs



Gloria M. Gutman

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The Gerontology Research Centre  
SIMON FRASER UNIVERSITY

March, 1989

**DEMENTIA PATIENTS IN INSTITUTIONS:  
A REVIEW OF RECOMMENDATIONS AND  
RESEARCH CONCERNING THEIR DESIGN,  
STAFFING AND PROGRAMMING NEEDS**

**Prepared for the  
Pacific Health Care Society**

**by**

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**March, 1989**

ISBN 0 - 86491-094-0

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Gerontology Research Centre  
Simon Fraser University at Harbour Centre  
515 West Hastings  
Vancouver BC  
V6B 5K3

Phone (604) 291-5062

Cover Design by Elizabeth Carefoot

March, 1989

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### Acknowledgments

The assistance of Donna Dickson in the preparation of this review is gratefully acknowledged. Thanks are also extended to Mary Cooper, Administrative Assistant and Secretary of the Gerontology Centre at Simon Fraser University, for typing various drafts of the manuscript.

## I. INTRODUCTION

Dementia is a syndrome characterized by intellectual deterioration severe enough to interfere with occupational or social performance. Cognitive changes include disturbances of memory, language use, perception, learning, problem solving, abstract thinking ability and judgment. In some patients personality is changed as well. Some patients show paranoid symptoms and are delusional. Irritability, agitation, verbal and even physical aggression towards family members may be exhibited as the disease progresses and patients feel less and less in control of their environment (Katzman, 1986).

There are two major causes of dementia: Alzheimer's Disease, which is estimated to account for 50-60% of cases and vascular disease and multiple infarcts (strokes) which are estimated to account for 10-20% of cases (Katzman, 1986).

While Alzheimer's Disease and strokes are known to occur in younger people, dementia is primarily a disorder of the elderly, with an estimated 4-8% of those aged 65 and over suffering from moderate and severe forms (Preston, 1986). The prevalence of dementia increases markedly with age. Estimates range from 3-5% with severe and moderate forms among those 65-79 to 13-22% among those aged 80 and over (Preston, 1986). These percentages translate to as many as 12,000 victims among British Columbians aged 65-79 and an additional 12,000 aged 80 and over. Given population projections, the number of dementia victims will

increase steadily over the coming decades. This is particularly true among the very old (i.e. those 80 and over), who are the fastest growing segment of the Province's and Canada's seniors' population (Statistics Canada, 1985).

The impact of dementia on society is even greater than the numbers would suggest because dementia, by its very nature, has a significant, often devastating, impact not only on the afflicted individual but on family members and other caregivers as well. Aronson and Lipkowitz (1981), among others, recommend a broad conceptual model for treatment in which attention is given to psychological, social and economic factors affecting both the patient and the family.

The first priority in the treatment of dementing illnesses, however is a comprehensive medical assessment. It is estimated that from 10 to 30% of those presenting with dementia-like symptoms have a reversible or non-progressive illness (Bonder, 1986; Cohen, 1984; Larson et al, 1985). Treatable conditions also may co-exist with dementia. Larson et al (1985), for example, found concomitant treatable conditions such as depression and drug overuse contributed to the demented state in 31% of their subjects. If the assessment does show the condition to be one of irreversible, chronic dementia then the treatment aim should be to maximize the patient's functioning level and quality of life.

The treatment setting of choice is first and foremost, the patient's own home. Sufferers' limited ability to cope with change makes environmental stability essential and they are more inclined to retain their functional effectiveness in a familiar and stable environment (Council on Scientific Affairs, 1986). This is one reason why home care is widely accepted to be to the advantage of demented individuals (Kahan et al, 1985; Council on Scientific Affairs, 1986). As the disease progresses, however, the point may be reached where care at home is no longer feasible and transfer to an institution becomes necessary.

The focus of this paper is on treatment/management and environmental design issues in the institutional setting. Estimates are that today, dementia patients constitute from 40-85% of the population of chronic care facilities (Benedict, 1983; Brice, 1986; Burnside, 1982; Mace, 1987; Office of Technology Assessment, U.S. Congress, 1987).

## II. WHAT BEHAVIOUR NEEDS TO BE TREATED AND MANAGED?

As Rule, Milke and Dobbs (1988) point out, a central question concerning the care of demented persons is whether they have special characteristics and needs. Surprisingly little research has addressed this question. A key need is to empirically identify the behavioural characteristics of dementia patients and also to identify those aspects of the environment that best support their needs.

Towards these ends, Milke, Dobbs, Rule and Milke (1987) recorded the location and behaviour of 8 individuals with SDAT and 10 cognitively normal residents of a nursing home in Alberta, using an "instantaneous scan" technique. Data were collected by trained observers at intervals of 10 minutes between the hours of 8:00 a.m. and 10:00 p.m., five days a week for a month. Demented persons were found to spend 65% of the day in the lounge on their bedroom wing and 11% of their time in their bedrooms. In contrast, normals spent the majority of their time (66%) in their bedrooms and only 7% in their lounge.

There were also differences between the two groups in amount of time spent in others' bedrooms. Normal residents spent 0.1% of their time in another resident's bedroom and were always visiting a friend. Residents with SDAT spent approximately 1% of their time in another's bedroom and usually entered without an invitation. Milke et al (1987) note that the dramatic nature of these visits may account for the tendency of other nursing home

residents and staff to overestimate the extent to which trespassing occurs.

Milke et al (1987) also note that whereas non-cognitively impaired residents were active when observations began at 8:00 a.m., demented persons were very inactive in the morning. They became progressively more active as the day progressed. This finding has obvious implications for staffing -- suggesting that on wards housing the demented, there should be as many or more staff on the afternoon shift as on the day shift.

Data on the behaviour of Alzheimer's patients were also gathered by Shroyer, Hutton and Anderson (1987). These researchers studied four cognitively impaired individuals for a total of 50 hours. Periods of observation were from 9 a.m. to 2 p.m. Although observations were carried out at an adult day care centre which provides care for Alzheimer's victims, the authors suggest that their findings are useful for the design of facilities. The findings were as follows:

- Other than walking to the bathroom or dining room subjects remained seated during most of the observation period.
- While seated, they napped or sat quietly with hands clasped in lap.
- While walking, they moved with head and eyes focused straight ahead, often colliding with low objects in their path.

- When walking from one interior location to another, they often placed their hands on interior components, such as chair frames, for security.
- They often paused and hesitated to move through doorways.
- When experiencing changes in floor surfaces, from soft to hard, they often stopped and sometimes refused to continue in the same direction.
- They appeared to be confused by mirrors and expansive interior and exterior views.
- They sometimes became confused as to the location of bathroom facilities.
- They did not seek social interaction, and the spatial arrangement did not encourage social interaction.

These data support Dobbs and Rule's (1988) observation that demented persons are quiet most (81-86%) of the time. Also, the observation (Milke et al, 1987) that demented persons spend a sizeable (one-third) part of their day in inactive sitting or standing.

Calkins (1987), in turn, suggests that such "null behavior" (defined as the lack of any observable behavior or activity) is at least in part a product of the physical environment. It is more prevalent, she notes, when:

- a) residents do not have the opportunity to choose between privacy and socialization, and
- b) environments provide either too much or too little stimulation.

### III. SEGREGATION VS. INTEGRATION

There has been considerable debate in the literature over whether, in residential care, it is best to segregate or to integrate the cognitively impaired.

Arguments given in favour of integration are that:

- mentally impaired residents benefit from contact with cognitively intact persons who serve as models for appropriate behaviour (Meacher, 1972);
- intact residents benefit from the humanitarian experience of assisting their impaired neighbours (Meacher, 1972);
- the fluctuating symptoms of dementia make it inappropriate to admit individuals to a special unit as their behaviour may not continue to be problematic (Cumming et al, 1982);
- dementia is difficult to diagnose and people may be misplaced into a segregated unit (Rabins, 1986)
- persons with reversible conditions, if placed in a segregated unit, could remain untreated (Getzlaf, 1987)
- caring only for dementia patients could be exhausting and demoralizing for staff (Pynoos and Stacey, 1986);
- families may find segregated units depressing and therefore curtail the frequency with which they visit their relative (Coons, 1985).

Proponents of segregated care, on the other hand, argue that:

- mentally intact residents find the behaviour of the cognitively impaired disturbing (Ablowitz, 1983; Coons,

1985; Donovan et al, 1971; Gutman, Mercer and Fallick, 1979; Hall, Kirschling and Todd, 1986; Novick, 1985; Wolfson, 1983)

- integration of the cognitively impaired creates mental anguish for the families of intact residents (Novick, 1985);
- mentally intact residents likely don't appreciate being used as "buddies" for the cognitively impaired especially when this is a staff-saving measure (Mace, 1985);
- integration may interfere with the quality of care both intact and demented residents receive (Novick, 1985);
- efforts to control the wandering confused client in an integrated setting may result in the excessive use of chemical and physical restraints (Coons, 1987; Hall, Kirschling and Todd, 1986; Rodenburg, 1986);
- special units allow the development of special programs and expertise in patient care (Brice, 1986);
- special units permit special interior and exterior design that facilitates the functioning of dementia patients (Mace, 1987; Clarke, 1982; Brice, 1986; Rodenburg, 1986);
- there is greater acceptance of "extreme" behaviour by patients and staff in special units (Roberts, 1984).

While Clarke (1982), Gang and Ackerman (1983), Peppard (1986a) and others claim that segregated units benefit residents and/or are rewarding to staff who, experience has shown, do not necessarily "burn out", and while specific behaviour changes have been reported by programs which specialize in care of demented

persons (see Table 1), the number of studies empirically assessing the impact of segregation vs. integration are small.

They fall into three groups:

- 1) Studies in which dementia patients are placed together with non-dementia patients or with patients with less cognitive impairment and changes over time in one or both patient groups are observed.
- 2) Studies in which dementia patients are placed in Special Care Units and their behaviour subsequent to admission is compared with their own pre-admission behaviour.
- 3) Studies in which there is random assignment of subjects to a Special Care Unit and control group.

#### Studies Assessing the Impact of Integration on Impaired and/or Intact Residents

Cross et al (1979) replaced three members of a group of six severely mentally impaired skilled nursing residents who had been meeting as a breakfast group with three individuals with only a moderate degree of impairment. The residents were assessed twice a week for two weeks prior to integration and for six weeks after integration. "Behaviour mapping" was the primary data collection technique. This consisted of recording, at two minute intervals throughout the breakfast period whether patients engaged in: functional interaction; social interaction; answering a question; eating behaviours; attentiveness to the activity of the group; or engaged in such other behaviours as touching, sleeping, smiling,

TABLE 1

BEHAVIOR CHANGES IN PERSONS WITH A DEMENTING ILLNESS REPORTED BY PROGRAMS WHICH SPECIALIZE IN CARE OF PERSONS WITH ALZHEIMER'S DISEASE AND RELATED DISORDERS

- \* decrease in wandering (Sawyer and Mendlovitz, 1982; Coons, et al 1986);
- \* decrease in episodes of agitation (Coons et al, 1986; Hall et al, 1986);
- \* no screaming or a decrease in screaming (Hebrew Home for the Aged at Riverdale, 1986);
- \* few or no drugs needed to control behaviour (Hall et al, 1986; Coons et al, 1986; Sommers, 1985);
- \* improved orientation (Coons et al, 1986; Sommers, 1985);
- \* decrease in socially unacceptable behaviors (masturbation, rummaging in other patients' rooms, etc.) (Coons et al, 1986; Sommers, 1985);
- \* weight gains or improved eating (Hall et al, 1985; Coons et al, 1986; Sommers, 1985);
- \* decrease in depression (Coons et al, 1986);
- \* greater ability to sleep through the night (Coons et al, 1986; Hall et al, 1986);
- \* a sense of humor (Coons et al, 1986);
- \* a happy, relaxed appearance (Coons et al, 1986; Hall et al, 1986);
- \* the formation of friendships (Coons et al, 1986; Hall et al, 1986; Mace and Rabins, 1984);
- \* reduction or elimination of incontinence (Wells, 1986; Coons, et al, 1986);
- \* the initiation of interpersonal exchanges (Coons et al, 1986); and
- \* decrease in hallucinations (Hall et al, 1986).

Source: Office of Technology Assessment, U.S. Congress "Losing A Million Minds: Confronting the Tragedy of Alzheimer's Disease and Other Dementias," (Washington, D.C., April, 1987). p.258.

laughing, walking away, crying, or talking to self. Each behaviour was also coded as either appropriate or inappropriate.

A second dependent measure consisted of an interview conducted one hour after breakfast during which subjects were asked the following six questions:

- How has your morning been?
- What have you been doing today?
- Did you go to Breakfast group?
- How was it today?
- Who was in it?
- What did you eat today?
- What day is this?

Additionally, the Affect-Balance Scale (Bradburn, 1969) was administered once per week over the eight weeks of the study.

The results indicated that the three severely impaired residents improved significantly in the integrated setting in functional interactions, appropriate eating behaviours and attentiveness to the speaker. Although differences were not statistically significant they also showed a slight positive shift in Affect-Balance scores. The moderately impaired, on the other hand, showed a slight negative change in Affect-Balance scores. Despite the latter finding, the authors interpret the results of the study as indicating that integrating individuals with varying

levels of mental impairment can improve the functioning of the severely impaired without adversely affecting the less impaired.

Wiltzius, Gambert and Duthie (1981) studied the impact, on intact nursing home residents (n=20), of being placed with a confused roommate. The intact residents were evaluated prior to receiving confused and disoriented roommates and two weeks after. The evaluation used a rating scale specially developed for the study. The scale included observational items considering mental and emotional status, sensory perception and level of performance of activities of daily living. The intact residents were rated following an interview and a discussion with nursing personnel.

After two weeks, although there were no significant changes in sensory perception or level of performance of ADL, 17 of the 20 intact residents expressed feelings of depression and loneliness; 12 reported feeling anxious and insecure over having a room-mate who was confused and 5 were noted by the nursing staff and investigator to be less friendly and more irritable. Only two residents increased their score in mental and emotional status.

#### Studies Assessing the Impact of Special Care Units on Inmovers

Greene, Asp, and Crane (1985) considered the progress of six patients who were assessed prior to admission to a Special Unit and at one month post-admission for one patient and at four months post-admission for the other five. They were among the initial patients admitted to a 26 bed unit in a 180-bed, four

storey "traditional" nursing home. Measures included behavioural observations of all six patients. Additionally, the Short Psychiatric Evaluation Schedule (SPES) which screens for depression (Burton et al, 1983) and the Short Portable Mental Status Questionnaire (SPMSQ) were administered to three of the patients. The results showed only 3% of behaviours to be "negative" following admission to the Special Care Unit compared with an average of 43% before admission. ("Negative" behaviours included hostility, agitation, combativeness, hallucinations, withdrawal, incontinence, inability to feed, and inability to dress). Two of the three patients administered the SPMSQ showed a 20% improvement and one patient a 10% decline in cognitive functioning; all three patients administered the SPES showed an improvement in affective behaviour.

Benson et al (1987) assessed 32 residents of a 46 bed dementia unit in a 415 bed long term care facility. All had diagnoses of dementia for a minimum of six months prior to admission, were unable to perform some or all of the activities of daily living and had problems with one or more of the following: nutrition, continence, orientation, attention span (shortened) and/or wandering. None, however, were actively assaultive or had marked impairment of language receptivity. Assessments were conducted prior to admission and after four and twelve months on the unit. The assessment instruments consisted of a modified version of the rating scale developed by Wiltzius, Gambert and Duthie (1981) and the New York State Department of Health Care Placement Form,

Medical Assessment Abstract. The authors report a significant improvement in mental and emotional status and basic functions of daily living at four months which was maintained at 12 months. In discussing the results, they note that the improvements "were not in areas related to the decreased cognitive abilities normally associated with dementia...but rather in areas that result in an increased quality of life. These areas include socialization, group interaction, hygiene and eating habits" (p. 322). The unit was also claimed to be cost-effective since it used the same staffing pattern as other units in the facility.

Cleary, Clamon et al (1988) evaluated the impact of a Special Care Unit which they term "a Reduced Stimulation Unit". Visual aspects of the unit were neutral in design and colour. There were no TV's, radios or telephones except one for emergencies. Staff, family and visitors were taught to touch patients, maintain eye contact, speak slowly and softly and allow patients to make choices.

Eleven patients, disoriented to time and place and presenting management problems due mostly to agitation and wandering, were assessed prior to moving to the unit and at three months post move. Dependent measures included the Haycox Dementia Behavior Scale (Haycox, 1984), 50% of the items of which assess ability to perform ADL, and Gottfries et al's (1982) Geriatric Behavior Scale (GBS) which focuses on mental and emotional

characteristics. Additionally, patients' weight, medications and use of restraints were recorded.

There was no significant pre-post change in the GBS but there was a significant improvement in Haycox scores. Patients' weight, which before the unit opened had been dropping, showed a reversal of the downward trend. Agitation levels and restraint use were significantly reduced and there was a significant increase in family satisfaction level. While there was no change in medication usage, more interaction among patients and between patients and staff was noted in the new unit. The authors feel that the latter may be because patients were less agitated subsequent to moving into it.

#### Controlled Studies of Special Care Units

Cornbleth (1977) randomly selected 10 of 18 non-wanderers from a Special Care ward, transferred them to other wards and moved into the experimental ward 7 of 19 wanderers from other wards. With these transfers, there was a total of 18 wanderers and 8 non-wanderers on the experimental ward and 12 wanderers and 10 non-wanderers on other wards. Patients were evaluated prior to transfer and at 6 and 12 weeks post-transfer. Analysis of the data indicated that the experimental ward had little impact on patients' cognitive and psychosocial functioning. An interesting multivariate effect was apparent, however. Wanderers showed greater range of motion on the experimental ward while non-wanderers showed greater range of motion off the ward. The

author interprets this finding as indicating that a protected ward can be appropriate for wanderers but that non-wanderers can be negatively affected by such placement.

In a more methodologically sophisticated study conducted in Australia, Wells and Jorm (1987) randomly assigned 26 individuals with moderate and severe dementia to a newly opened Special Care Unit or to a waiting list. At three-month follow-up, both groups showed deteriorated scores on the Mini-Mental State Examination (Folstein et al, 1985), a modification of Nihira et al's (1974) Adaptive Behavior Scale and a modification of Gilleard et al's (1984) Behavior Problems Checklist. There was no significant difference between the groups in the rate of deterioration. Admission of dementia victims to care in the Special Care Unit did, however, appear to be of benefit to their caregivers. Whereas psychological symptoms remained high among relatives of control subjects, they fell markedly among caregivers whose relatives were assigned to the unit.

While the above studies, and certainly the last one, do not definitively prove that segregation in a Special Care Unit is best for dementia patients, it appears that being forced to mix with severe dementia patients may be detrimental, at least to the peace of mind and quality of life, of alert residents.

Regardless of findings from the research literature, as Ohta and Ohta (1988) point out:

...There appears to be an ever growing belief that special units should be established for nursing home patients who suffer from Senile Dementia of the Alzheimer's Type (SDAT). Indeed, the proliferation of such units based upon this belief has been enormous. For example, one major nursing home corporation alone has 40 such units already in existence. (p.803)

#### What are the Defining Characteristics of a Special Care Unit?

Five features are generally cited as criteria for designating a unit as specialized for care of dementia patients. These are that the unit:

- 1) is physically separated from the facility (nursing home, hospital) of which it is a part;
- 2) serves all or mostly individuals with dementia;
- 3) has staff with specialized training;
- 4) has special design features
- 5) has special activity and/or therapeutic programs.

After a brief discussion of criteria for admission to Special Care Units, the remainder of this paper will review the literature relating to design, staffing and programming for dementia patients with special emphasis on findings relating to Special Care Units.

#### Criteria for Admission to Special Care Units

As a number of authors note (cf. Mace, 1987; Ohta and Ohta, 1988), special care units for dementia patients do not represent a homogeneous group. Rather, they tend to vary considerably in terms of their philosophy, environmental design and therapeutic

approach. They also vary in their admission criteria. For example, most are similar in tending to select patients in the middle stages of their illness, who have "behaviour problems" or "who are not working out" on regular units, in the belief that these patients benefit most from special care and that other residents and staff benefit from their removal from regular wards. Some, however, restrict admission to those who "can participate" or who can manage self-care and follow simple instructions. Others take mainly those who are unable to do these things.

An example of the latter is the St. Joseph's Hospital Nursing Home in Yonkers, New York, who list the following as criteria for admission to their Alzheimer's and Related Disorders Unit (ARD Unit):

TABLE 2

## CRITERIA FOR ADMISSION TO THE A.R.D. UNIT

Candidates for admission to the unit must meet the following criteria:

1. They must have chronic progressive dementia and all reversible or pseudodementias have been excluded or treated.
2. Their dementia is manifested by the following symptoms:
  - a. Absence of or short span of attention
  - b. An inability to communicate needs either verbally or nonverbally
  - c. An emotionally labile or withdrawn personality
  - d. An inability to provide self-care, requiring total or near total assistance in activities of daily living (ADL)
  - e. Impaired judgment requiring protection from self or others
  - f. Total or near total disorientation to time, person, and place
  - g. Loss of recent memory
  - h. Disruptive behavior

Source: Ackermann, 1985

#### IV. DESIGN RECOMMENDATIONS

Important aims in the design of facilities for Alzheimer's patients are to maximize the independence of the individual, promote social interaction and provide stimulation, while at the same time providing a safe, secure environment. In the literature, various authors suggest aspects of the environment that are important to consider in attempting to achieve these goals. A number of these are described below. It is important to bear in mind, however, that there is only very limited empirical research on the effectiveness of these design recommendations.

##### Size of Unit

Ohta and Ohta (1988) report considerable variation in the size of Special Care Units - from 10 patients per unit to 49 patients per unit. They favour smaller units, noting that

...the unit with 10 patients allows each patient to see and interact with a small and constant set of other patients throughout the day, each and every day. The size of this unit appears to promote friendships and socialization among patients and foster a sense of neighbourhood. (p. 804).

Weaverdyck and Coons (1988) feel that small units housing from 10 to 20 people have a greater potential than large units for offering a homelike and manageable environment. They note that a small unit, if well designed and carefully cued, can be negotiated by even very impaired persons. They recommend that institutions caring for large numbers of demented patients establish a series of small graded units in which the physical

environment, staff approaches and opportunities for involvement are adapted to meet the needs of individuals with differing levels of impairment.

Schultz (1987) suggests that for staff ease and patient comfort, clustering rooms which accommodate 8-16 patients is a good model. Mace (1988) reports that in Britain, units of approximately 15 persons seem to work well.

#### Type of Rooms

Ohta and Ohta (1988) report that private rooms are rare in existing Special Care Units. In most units, rooms are shared by two or by three patients. They note that, in most cases, room type (and unit size) appear to have been determined by such practical considerations as space availability in existing facilities and budgetary limitations rather than on the basis of theory or research.

Their sources of information included published reports describing five Special Care Units (Benson et al, 1987; Clarke, 1982; Hall et al, 1986; Kromm and Kromm, 1985; Peppard, 1985), four unpublished reports describing seven other units (Cameron et al, 1987; Reingold et al, 1986; Rupp, 1987; Wilson and Patterson, 1987), policy manuals of two other units and personal observations of five units. Only two of these units provided a rationale for choice of room type. Staff of one unit with shared rooms (Peppard, 1986a) argued that private rooms increase

isolation, increase withdrawal and hasten functional decline. They viewed roommates as a vital source of social stimulation. Staff of the other unit, which had private rooms, argued that everyone, including dementia patients, has a need for privacy and private space.

Other proponents of private rooms, such as Weaverdyck and Coons (1988), cite other advantages. These include the opportunity for patients to furnish their room with personal furniture and other cherished possessions which not only helps the individual to have a sense of ownership but also provides continuity with his/her prior life. As well, having a private room provides the resident with the option of spending time alone.

Weaverdyck and Coons also note that some of the most unsatisfactory placements in nursing homes involve the pairing of an intact individual with an impaired one. Such an arrangement, they feel, can be very stressful for the alert person, especially if the roommate is a stranger. The situation can be equally disturbing for the impaired person who is often able, they contend, to sense rejection.

Wolfson (1983), with whom Ablowitz (1983) and Gang and Ackermann (1983) concur, puts it more strongly. He contends that while the thinking may be that:

...by providing continual commentary as to where things are and what things need attention next, the more oriented resident helps to optimize the function of his less oriented roommate,....the reality is that all too often such a policy

creates intolerable suffering for the intellectually preserved resident who, forced to live with a person whose social humanity is more a matter of historical record and moral inference than of tangible presence, feels abandoned to the netherworld of the insane. (p. 246).

### Colour

In reference to the elderly population in general, Cluff (1988) notes that, as a result of yellowing of the lens of the eye, many older people have difficulty perceiving colours in the blue end of the spectrum. Many also have difficulty distinguishing between colours having a great deal of white in them, such as beige, light grey, pale blue and pale green. She recommends using bright orange, yellows and corals to create a responsive and human environment.

Only a very small number of articles discuss colour with specific reference to dementia patients. Koenig (quoted in Goodman, 1986) recommends bright colours which, she feels, help Alzheimer's patients to orient themselves. To ascertain which colours were preferred she laid out swatches on her desk and invited residents to pick from among them. The favourites, she found, were bright hues of blue, red and green.

### Orientation and Way-finding Aids

Schiff (quoted in Higgs, 1988) states "the environment should not play tricks on the residents". Rather, it should provide a variety of cues and landmarks to assist residents to understand

and manage their day-to-day life. Suggested design features for facilitating orientation and way-finding include:

- colour coding e.g. use of contrasting colours on each side of the wall so residents can be reminded that they live on the "green" or the "orange" side (Ackermann, 1985). Hiatt (1980a,b; 1985) and Snyder et al (1978) feel, however, that colour coding has been overrated and, if used alone, may not be effective. Cluff (1988) recommends against colour coding of residents' room doors since confused residents may try to enter every door of the same colour they encounter.
- use of pictures, objects and symbols that indicate the function of a particular space, e.g. a knife, fork and spoon on signs indicating the direction to the dining room; pictures and posters of food and such artifacts a butter churn, cookie cutters, spoon rack in the dining room (Schiff, 1982, 1988); chairs outside the sitting room (Calkins, 1988);
- multiple cuing, e.g. a bedroom door may have three or four cues -- colour, a current picture of the resident as well as one taken in his/her youth or when "well", his/her name; the room number (Peppard, 1986a; Schiff, 1988);
- signage that is easy to read and at appropriate height e.g. 3/4 or 1 inch white lettering on a brown or black background hung at wheelchair height (Ackermann, 1985;

Hiatt, 1980b; Schiff, 1988; Weaverdyck and Coons, 1988;);

- use of colour contrast to facilitate identification of boundaries of objects e.g. a different coloured strip on the edge of steps; handrails painted a different colour than walls; door hardware and door frames a different colour than the door; a colour change where floor and wall join (Cluff, 1988; Schiff, 1988; Schultz, 1987). Visual contrast should also be used where there is a change of level, for example, where ramps or stairs are located (Cluff, 1988). Sharp colour contrast should not be used, on the other hand, in continuous flooring. In the case of dementia patients:

...If there is a point on the floor where two different colors meet, patients feel that there should be an accompanying change of level and they become fearful of crossing. (Goodman, 1986, p.34).

- use of "landmarks" to assist in way-finding e.g. place a distinct object identifiable from a distance, such as a grandfather clock, at the end of a hallway; place distinctive pictures, posters or wallhangings at the entrance to or along the walls of the different wings of the living units (Ackermann, 1985; Calkins, 1988; Hiatt, 1980b; Schiff, 1982, 1988). Hiatt (1980b) cautions, however, that signs and landmarks need to be at an appropriate height for older people - not too

- high because most look down when walking and because they may have difficulties craning their necks upward;
- use different textures to identify a change in location  
e.g. wall paper interspersed with painted walls; wall hangings; tile vs. carpet (Hiatt, 1985; Schiff, 1982).

### Meeting Safety and Security Needs

As Calkins (1987) notes, the environment must first be designed to insure against accidents resulting from the physical changes that accompany normal aging. For example, glare is known to be more problematic for older than for younger people; dark adaptation takes longer as we age, making abrupt changes in lighting levels more difficult to adapt to. Beyond this, however:

...the environment must be safe for the cognitive disabilities which cause this population not to follow typical behaviour patterns. A window may look like a way out even though it is four stories from the ground. A stove may be turned on without the realization that there will be flame or that it will get hot. (p.33)

### Wandering Space and Containment Devices

As Milke (1988) points out, wandering is considered so problematic and potentially dangerous that it is commonly treated with restraints or drugs. Despite this, it is a behaviour that has been remarkably under-researched. For example, relatively little is known about how frequently it occurs, or how it might best be managed.

i. What do we mean by the term "wandering"?

Chafetz (1988) defines wandering as "ambulation which is independent of environmental cues". "The term", he adds, "implies risks of leaving the resident's unit, getting lost, and, therefore, into danger". Milke (1988) presents a more detailed and inclusive definition. She identifies, first, three levels of absconding (from rooms/activity, from the floor of the nursing home, and from the institution itself). A second set of behaviours include locomotive restlessness, "group walking"\*, motoric restlessness (small fidgeting movements), having "navigational" difficulties, searching, and trespassing into other individual's private territory.

ii. Why do people wander?

A variety of explanations have been given for wandering behaviour. Weaverdyck (1988) suggests people may wander because they are searching for something, because of boredom, because of anxiety or as a side-effect of medication. Ackermann (1985) suggests people wander because they have a need they cannot identify or are unable to communicate (e.g. the need for toileting). Wandering, she suggests, can also be interpreted as a need for security ("I have to get home to my mother") or an

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\* Milke, Dobbs, Rule and Milke (1987) use the term "group walking" to describe demented persons walking with each other. They note that often three will walk hand-in-hand or arm-in-arm, but sometimes the group will grow to five. They suggest that group walking may be an important social recreation among demented persons who have lost much of their ability to communicate verbally.

expression of a former life style ("I have to make supper for the children").

Cornbleth (1977) and Hiatt (1980a) both found that wanderers show a lower level of psycho-social functioning than non-wanderers. Hiatt (1980a) suggests that wandering may be a form of communication for less sociable and less verbal individuals. She suggests that it may be a way some individuals cope with stress or dissipate tension. For these individuals, wandering may be an extension of a life-long pattern of coping with uncomfortable situations -- similar to such acceptable behaviours of younger years as pacing, fidgeting, or strolling when working out a problem\*. She suggests that for others, wandering may be a response to crowding and the anxiety produced by being in the presence of too many people. Hiatt also notes that in some instances wandering may be a calculated anti-social behaviour, adopted in response to rules which limit range of movement off the ward. In such cases, wandering may represent an assertion of one's will. It may also serve as a means of avoiding unwanted discharge back to the community.

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\* Monsour and Robb (1982) present data supporting Hiatt's hypothesis. When the closest significant others of 22 matched pairs of wanderers and non-wanderers were questioned about the patient's prior life-style, wanderers were found to have demonstrated a more motoric behavioural style in their earlier life than non-wanderers. A motoric response to stress was also found to be a life-long characteristic of wanderers. Non-wanderers had tended to react to stress with more emotional reactions and less motor activity.

iii. How many people wander? How frequently does wandering occur?

Hiatt (1980a) reports one wanderer for every ten skilled nursing care patients and about six per 100 patients where skilled and intermediate care levels are combined.

Snyder et al (1982) used a behaviour mapping technique to study wandering and space use by 8 wanderers and 8 non-wanderers matched on the basis of sex, level of care, length of stay in the nursing home, vision, hearing and mental status. Wanderers, 55% of whom had a diagnosis of organic brain syndrome, were found to spend 39% of their waking time in motion. Milke (1988), in an observational study of 10 residents of a nursing home diagnosed as having mid-stage SDAT, found that about 25% of their day was spent wandering. However, when the data were disaggregated according to type of wandering, innocuous behaviour -- restless locomotion, group walking, fiddling with objects, having navigational difficulties and searching for things -- accounted for almost all of the time. Wandering behaviours likely to expose subjects to danger accounted for only about 1% of the total observation time. Further, lag sequential analysis, in which the probability of any given behaviour evolving into another behaviour is calculated, revealed that change from restless locomotion to absconding from the top floor where the unit was located, occurred with a probability of only .01. The probability of trespassing into others' bedrooms also was extremely low (.01). Most interesting, however, was Milke's

finding that although restless locomotion always immediately preceded absconding from the floor, trespassing was the strongest predictor of absconding behaviour. In other words, while rates of absconding from the nursing home's top floor were very low, subjects always trespassed first, even though, as Milke notes, the "escape route" did not require trespassing.

Milke's observation as to the "escape route" taken are also interesting. Subjects always absconded via the central stairwell or elevator, never the fire exit adjacent to their dayroom. She goes on to suggest that prevention could be viewed as a design issue. She argues that demented residents could easily have been stopped from absconding from the floor through the use of such strategies as an electronic detection system or a grid-like floor pattern in front of the main stairwell and the elevator.

iv. Environmental techniques for preventing unauthorized exiting  
Chafetz (1988) reports two experiments evaluating the efficacy of two different methods of controlling unit exiting behaviour. One method used a floor pattern such as Milke (1988) suggests. In this method, eight strips of 1.5 inch black plastic tape were placed on the floor, parallel with the door threshold, between 10 inches and three feet from the threshold. The dependent variable was the frequency of door openings (number per 24 hours, 7 a.m. - 7 p.m.) as measured by the sounding of a buzzer when the door was opened.

No relationship was found between the tape grid and unauthorized exiting behaviour. The author feels this may be related to the type of doors on the unit.

Hussian and Brown (1987) obtained positive results in a study in which strips of tape were placed in front of a single-width, opaque door.\* Hussian, in a personal communication to Chafetz, noted that he had informally observed that demented persons will cross the grid on the way to a glass door or a double-wide door, both of which existed in the unit in which Chafetz's study was conducted.

In Chafetz's second study, the intervention consisted of installing on each left hand door, one foot above the existing bar handle, a second latch mechanism. This mechanism latched with a strikeplate bolted to the right hand door. It was unlatched by pressing a 4 in. x 8 in. lever. The lever was painted fluorescent orange, had "emergency fire exit only" printed on it and, if pressed, set off an alarm. To open the door, both the old and new latches had to be disengaged, causing two buzzers to sound.

The dual latch proved to be highly effective in reducing unauthorized exiting. As Chafetz notes, it has the added benefit of being inexpensive relative to electronic systems (under \$300 U.S. per door).

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\* Several grid patterns were tried. The most effective consisted of 8 horizontal strips ending 57.2 cm from the door.

Liebowitz, Lawton and Waldman (1979) suggest a similar device, consisting of a latch that opens easily when two buttons are pressed simultaneously, a task which they claim is impossible for the impaired wanderer to master.

Other techniques suggested for preventing unauthorized exiting include:

- disguising exit doors by painting them the same colour as the surrounding wall (Weaverdyck and Coons, 1988);
- installing sheers or curtains so doors are perceived as windows (B.C. Long Term Care Association, 1987);
- covering door with a large poster so it is perceived as a picture within a frame (B.C. Long Term Care Association, 1987);
- hanging a theatre rope across the doorway (Ontario Ministry of Community and Social Services, 1988)
- placing latching mechanisms above eye-level (B.C. Long Term Care Association, 1987);
- installing a wrought iron gate with a spring closure outside the front door so it looks like there is a porch (B.C. Long Term Care Association, 1987);
- installing floor pads in the corridor which, when stepped on, signal a patient's approach to the elevators (Goodman, 1986);
- equipping patients with a bracelet, anklet or device embedded in a belt or attached to clothing that

triggers a sensor, which in turn, sounds an alarm. Preliminary results of a study of the effectiveness of such a system (Ontario Ministry of Community and Social Services, 1988) indicate that a number of residents wearing a Wander Guard<sup>TM</sup> bracelet now associate the alarm with the front door and have learned to avoid it. Some, in fact, have associated the alarm with all doorways and no longer walk into other parts of the home.

v. Environmental techniques for managing trespassing

Weaverdyck and Coons (1988) suggest that clearly identifying and individualizing residents' rooms may be a way of dealing with this problem. Other suggestions include:

- Dutch doors which allow patients to converse with others passing by while restricting entry into their bedroom (Gwyther cited in Schultz, 1987; Hiatt Snyder, 1976).

vi. Environmental techniques for managing locomotive  
restlessness

Several authors suggest ways of dealing with locomotive restlessness which involve providing a focus/outlet for it. These suggestions include:

- providing a "draw" of activity rooms at either end of the corridor (Schultz, 1987);

- using hedges outside and furniture inside to introduce a pattern of traffic flow (Calkins, 1988; Monsour and Robb, 1982);
- providing a covered walkway around the unit (Schultz, 1987);
- installing a walled or fenced garden or patio in which persons can wander (Johnson, 1986). A facility described by Peppard (1986b) uses entrances at both ends of a garden terrace to connect a circular walkway (see Figure 1). Fencing is embedded in the shrubs and flowers providing an aesthetic yet secure environment. Where foliage is used, however, it should be non-poisonous as demented patients may put anything in their mouths.

#### Prevention of Falls

The following are among suggested ways of preventing falls:

- Avoid floor coverings with isolated patches of colour because the demented, who often have visual problems, may try to pick them up or step over them (Schiff, 1988);
- Use carpet tiles in dining areas to eliminate glare, cushion falls, reduce breakage and simplify replacement and cleaning (Mace, cited in Schultz, 1987);
- Provide easy-to-grip and properly anchored handrails along the walls (Schultz, 1987);

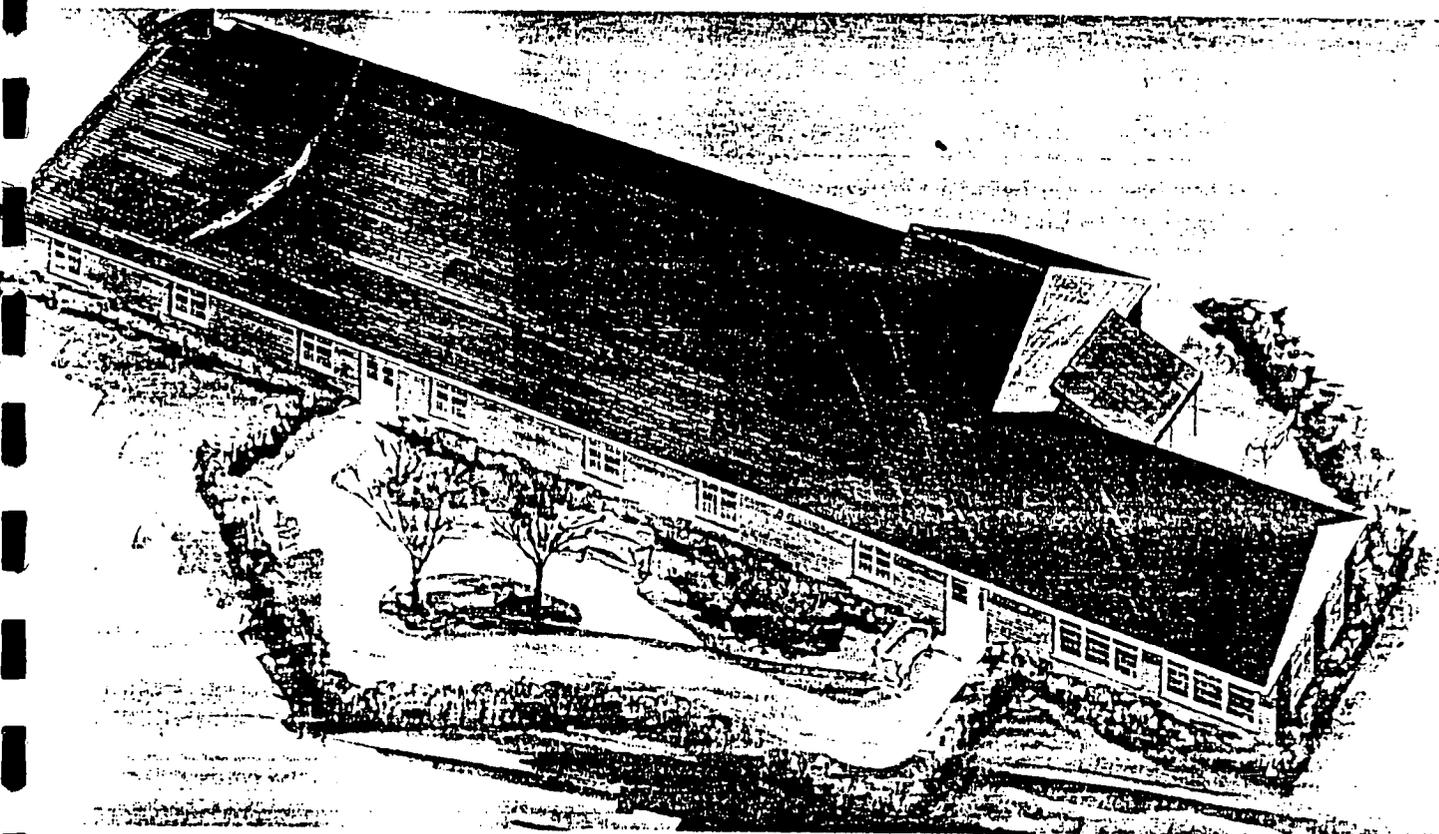


Figure 1 : An enclosed walkway for A.R.D. patients constructed at Hannover Healthcare's Hospitality Home West (Xenia, Ohio).

Source: Peppard (1986b)

- Use heavy and stable furniture. Calkins (1988) suggests the bright coloured square plastic type used with children;
- Use hard-to-climb fixtures in toilets (Schultz, 1987).

Other Suggestions to Enhance Safety:

- in kitchen areas use over-ride timers on stoves, ovens and appliances to prevent them from being used unsupervised (Calkins, 1988).
- use heavy lamps with cages around the bulbs. These "contribute to the safety of the lighting and prevent hoarding of the lamps" (Calkins, 1987).

Minimizing Over-stimulation Through Environmental Design

Schultz (1987) suggests that over-stimulation may be responsible for patients striking out or wandering. As noted earlier, Calkins (1987) suggests it (and under-stimulation and lack of privacy) may contribute to the "null behaviour" so often seen in nursing home patients.

Suggested techniques for minimizing over-stimulation are:

- avoid glossy paint and use low-gloss or matte finishes (Schiff, 1988; Schultz, 1987; Peppard, 1986a,b);
- avoid highly waxed, shiny floors (Schiff, 1988);
- minimize the glare of sunlight and avoid shadows from blinds (Peppard, 1986b);

- avoid "busy" patterns, stripes or very small prints  
(Schiff, 1988; Peppard, 1986a,b)
- lessen the noise on a unit by using sound absorbing floor, wall and ceiling coverings, minimizing the number of telephones and scheduling housekeeping activities at times when residents are away from the unit (Hall, Kirschling and Todd, 1986; Hiatt, 1985; Peppard, 1986a; Weaverdyck and Coons, 1988);
- avoid using a public address system as it can be very disruptive and disorienting to confused residents  
(Coons, 1985);
- use smaller units or pods of rooms (Coons, 1985; Stevens, 1987; Weaverdyck and Coons, 1988)
- avoid unnecessary lines or patterns on the floor (Schiff, 1988);
- avoid fluorescent light fixtures that flicker. Flickering light is thought to evoke seizures in epileptics and dementia patients or at least to elicit behaviour problems in the latter (Peppard, 1986b);
- remove potentially disturbing or misleading stimuli such as mirrors and TV sets and replace traditional artwork with simple geometric patterns (Hall, Kirschling and Todd, 1986).

#### Minimizing Under-stimulation by Environmental Design

Weaverdyck and Coons (1988) suggest that understimulation can also be a problem. They note that "if understimulated, he (the

resident) probably will not recognize or be able to articulate that he is bored or sensory deprived. Instead, he may become restless or perhaps angry". They and others suggest the following strategies to increase stimulation:

- Provide a high level of uniform lighting. Changes which occur as part of the normal aging process result in a need for as much as three times the amount of light needed by the average adult for residents to see clearly (Cluff, 1988; Schiff, 1988; Peppard, 1986);
- Provide a choice of stimulation level for the resident by providing small quiet rooms as well as larger activity areas (Weaverdyck and Coons, 1988);
- Provide textures to touch (Ontario Ministry of Community and Social Services, 1988).

Stimulation may also be increased by arranging furniture and changing mealtime routines so they are more conducive to conversation. For example, Melin and Gotestam (1981) moved patients in a psychogeriatric ward from along the walls of corridors to around small tables. Instead of individual trays, coffee cups, coffee and buns were placed on a table in a special coffee room. Demented patients exposed to this changed environment showed increased communication compared with controls who received coffee as usual in their wheelchairs along the wall. During meals patients in the experimental group were seated around small tables containing serving dishes and beverages which they could help themselves to. Control subjects continued to

receive their meals on trays. There was a significant improvement over baseline and relative to controls in eating behaviour in the experimental group.

### Utilizing "Over-Learned" Skills

Weaverdyck and Coons (1988) state that many individuals suffering from Alzheimer's disease retain skills that have been over-learned. Functioning level can be maximized by environmental design and programming that facilitates utilizing these over-learned skills.

Design recommendations include:

- providing a "homelike" environment and encouraging patients to engage in such activities done previously as making their bed, setting the table, doing laundry, gardening. This means including personal furnishings in the residents' rooms, giving them access to a kitchen, to laundry facilities, to a garden (Weaverdyck and Coons, 1988; Schultz, 1987; Schiff, 1988). As Calkins (1987) notes:

...The more the environment is reminiscent of "home", the less traumatic the move to the institute will be. This is especially important in the activities of daily living... [For example] the dining area must have tables which seat different size groups, ideally from one to six. Serving food family style, rather than on trays, is also more reminiscent of family patterns.  
(p.32)

- encouraging socializing among residents through sociopetal grouping of seating; providing a variety of comfortable

furniture; arranging furniture to facilitate small group interaction since people with dementia are thought to be better able to cope with groups of 4 to 6 people than with larger groups (Calkins, 1987; Shroyer et al 1987).

#### Minimizing Urination/Defecation in Inappropriate Locations

Elimination in inappropriate locations is annoying to other patients and makes extra work for caregivers. Suggested environmental modifications that may minimize this undesirable behaviour include:

- minimize corners since male patients with dementia often urinate in them (Rodenburg, 1986);
- provide clear visual cues as to the location of toilets (Shroyer et al, 1987);
- identify toilets with some startling landmark e.g. red chair outside the door (Schiff, 1982); yellow awning over the door (Coons, 1985);
- provide a sufficient number of toilets. Mace (cited in Schultz, 1987) recommends, for a 10-resident unit, 3 uni-sex toilets in clear view of the sitting room(s) for easy access. She also suggests toilets off the kitchen and laundry room and stresses that they be large enough to accommodate the resident and two staff members;

- treat any urinary infection; increase liquid intake and toilet residents frequently to minimize incontinence (Coons, 1985; Peppard, 1984, 1986a).

### Sample Floor Plans

Rodenburg (1986) notes that presently there are no architectural guidelines in Canada as to what constitutes an optimal environment for ambulatory patients with Alzheimer's disease. He feels strongly that such guidelines, if developed, must take the behavioural characteristics of these patients into consideration.

...The traditional ward, characterized by a centrally placed hallway flanked by dormitories, a nursing station and other rooms, entices patients to pace aimlessly to and fro and to gravitate towards the entrance door to get out. This results in crowding, noise, aggression, physical injury and unnecessary restraint. In addition, much of the nurses' time is spent removing patients from undesirable areas. (p. 315).

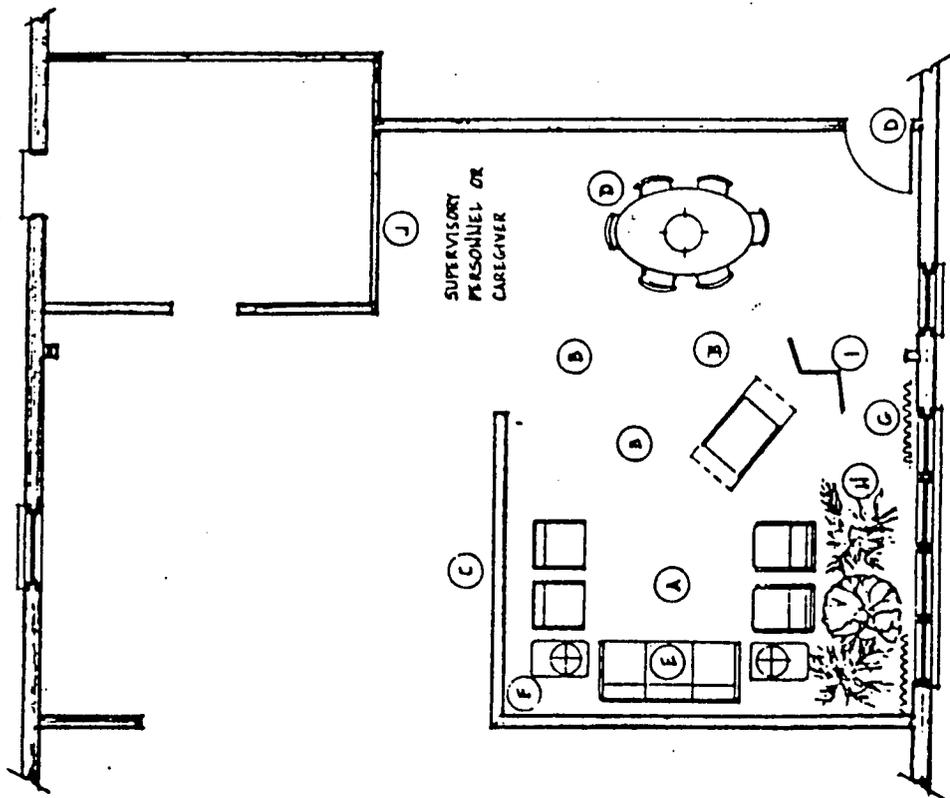
He recommends, instead, accommodation to the natural tendency of patients to pace through creation of a continuous enclosed glass-walled walkway that curves around a garden. A soundproof area located near the nursing station for temporary placement of noisy or delirious patients is also recommended.

Shroyer, Hutton and Anderson (1987) provide a floor plan (Figure 2) for a lounge area containing a number of the design features explicitly included to reduce confusion.

Reduction of confusion was also a major aim in the design of the Weiss Institute whose floor plan is shown in Figure 3. In this plan, the basic concept includes a large central space with

INTERIOR DESIGN CONCEPTS	
INTERIOR DESIGN FEATURES	OBJECTIVES
A CLUSTER FURNITURE ARRANGEMENT	ENCOURAGE SOCIAL INTERACTION
B CIRCULATION PATHS FREE OF LOW OBJECTS	PROMOTE SENSE OF SECURITY & COMPETENCY
C 8' PARTITION TO BLOCK VIEW INTO LARGER SPACE	PROMOTE SENSE OF SECURITY
D RESOURCES (DINING & BATHROOM) ARE CLOSELY ACCESSIBLE & AT A DISTANCE CONSISTENT WITH COMPETENCE	REDUCE SPATIAL-TEMPORAL CONFUSION
E CHAIRS & SOFAS WITH ARMS & HIGH STRITCHERS BETWEEN FRONT LEGS; STURDY, NON-COLLAPSIBLE DESIGN	REDUCE DISORIENTATION
F FURNITURE WITH ROUNDED CORNERS & EDGES AND UNCOMPLICATED DESIGN	REDUCE CONFUSION
G PORTABLE TABLE LAMPS FOR HOME-LIKE ATMOSPHERE AND EFFECTIVE, GLARE-FREE ILLUMINATION	PROMOTE SENSE OF SECURITY & WELL-BEING
H FULL-LENGTH PRIMERIES FOR TRADITIONAL APPEARANCE AND DAYLIGHT & HEAT CONTROL	REDUCE CONFUSION
I TALL PLANTS FOR AESTHETIC INTEREST AND DIFFUSION OF DAYLIGHT	ENHANCE SENSE OF SECURITY & WELL-BEING
J SCREEN TO REINFORCE CLUSTER ARRANGEMENT AND REDUCE GLARE	CONTRIBUTE TO SAFETY
OTHER: SUPERVISORY ACTIVITY CONVENIENTLY LOCATED	IMPROVE COMFORT CONDITIONS
MINIMIZATION OF DOORWAYS	CONTRIBUTE TO PERSONAL COMFORT
ELIMINATION OF CHANGES IN FLOOR SURFACES	REDUCE MONOTONY
AVOIDANCE OF SHARP COLOR CONTRASTS, CONFUSING PATTERNS, FINE DETAIL	ENHANCE PERSONAL COMFORT AND SENSE OF SECURITY
WARM COLOR SCHEME	CONTRIBUTE TO PERSONAL SAFETY
	REDUCE CONFUSION & FRUSTRATION
	COMPENSATE FOR AGE-RELATED VISION CHANGES

BY H. ANDERSON



SCALE: 1/4" = 1'

Figure 2 Interior design concepts that may be beneficial to patients with Alzheimer's disease.

Source: Shroyer, J.L., Hutton, J.T., and Anderson, G.M. (1987)

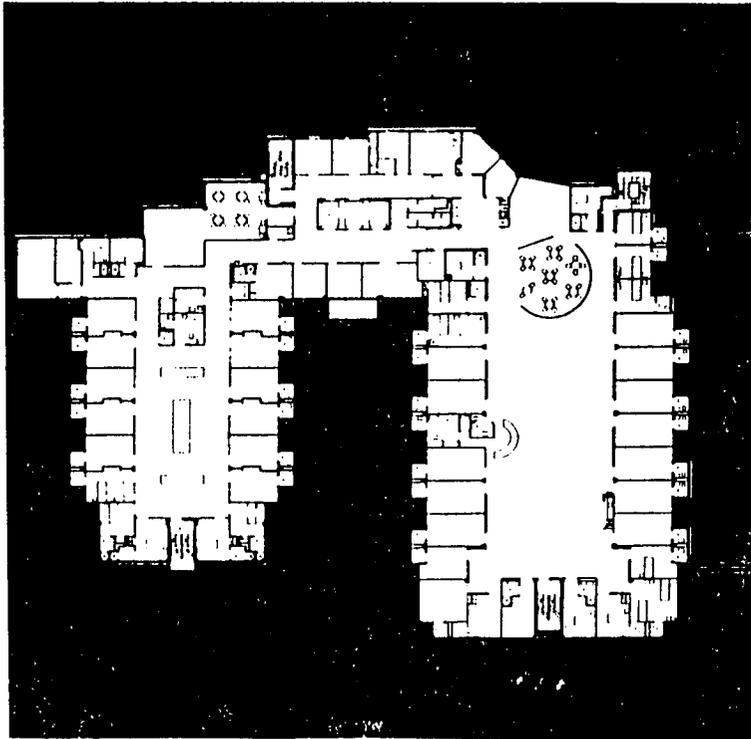


Figure 3: Floor plan of the Weiss Institute

Source: Liebowitz, B., Lawton, M.P. and Waldman, A. (1979)

residents' rooms located around its periphery. According to Liebowitz, Lawton and Waldman (1979) "confusion about time is counteracted by providing a view of such spaces as the dining and occupational therapy areas, where specific activities provide clues about time." A second major aim of the plan was to increase participation in planned activities by making them visible to all. Where some separation was necessary, activities take place in a glass enclosed gazebo located at one end of the floor.

Liebowitz, Lawton and Waldman (1979) report that moving into the Weiss Institute did not improve residents' intellectual functioning or ability to care for themselves. Comparison of behaviour in the old and new facility showed that the design had the desired effect in terms of socialization. Patients were observed to spend more time in a "social" space and less time in their bedrooms. Liebowitz, Lawton and Waldman also report that "there was less crowding, more participation in enriching activity and signs of increased interest in the physical surroundings". Evaluations from staff and relatives was also positive, with the latter visiting more frequently in the new building. Unfortunately, this design cannot be replicated due to current life safety code requirements. Liebowitz, Lawton and Waldman do, however, suggest several ways in which it might be adapted to meet the current code.

#### IV. STAFFING OF SPECIAL CARE UNITS

##### Type of Staff Needed

Although no empirical work has been done on the topic, a point that various authors agree upon is that, given the complex nature of dementia and the pervasiveness of its effects, various disciplines need to be represented in the care team.

Table 3 shows the multi-disciplinary nature of staffing at one Special Care Unit.

TABLE 3

DAILY ON-UNIT STAFF (7 days/week)  
PRESBYTERIAN HOMES WILSON SPECIAL CARE UNIT  
INTERDISCIPLINARY TEAM

<u>Management/Training</u>	<u>Consultants</u>
Program Coordinator	Medical Advisor
Head Nurses	Director of Nursing
Activities Supervisor/Care Units	Director of Activities
<u>Health Services</u>	<u>Supportive Services</u>
Chaplain	Food Service
Dietician	Housekeeping
Occupational Therapist	Laundry
Physical Therapist	Maintenance
Pharmacist	Security
Social Worker	Volunteers

Source: Schultz (1987)

##### Staff-to-Patient Ratio

Ohta and Ohta (1988) report that the staff-to-patient ratio in the 17 Special Care Units they obtained data on varied from a

high of 1:3 to a low of 1:12+. They also note that the staff-to-patient ratio can vary considerably within a given unit over a 24 hour period. For example, while the unit with the 1:3 ratio maintained that ratio consistently the unit with the 1:12 ratio (day shift) changed to 1:16 (evening shift) and to 1:25 (night shift).

Fox (in Schultz, 1987) presents more detailed information on staff-to-patient ratios, including the specific types of staff employed by four dementia care units (see Table 4).

#### Selection and Training

Coons (1985) reports that at Wesley Hall, the 11-bed dementia unit established at the Chelsea (Michigan) United Methodist Retirement Home, staff included a full-time nursing supervisor, one full-time and one part-time (4 hour) aide on both the day and afternoon shifts, and one aide at night. Most of these individuals were selected from those already employed in the home.

Coons (1987) reports that in choosing staff for Wesley Hall the following traits were considered important: "flexibility, a sense of humour, patience, willingness to be part of a team and good communication skills" (p.7).

At Wesley Hall, the direct service staff were called "resident assistants" rather than aides and their training emphasized that

TABLE 4

## STAFFING RATIOS FOR DEMENTIA-CARE UNITS

	COLONIAL MANOR LaGrange, IL	RUTH TAYLOR GERIATRIC INSTITUTE New York, NY	HEATHER HILL Cleveland, OH	BETHANY METHODIST TERRACE Morton Grove, IL
RESIDENTS	37 (33 at time of interview)	46	30	32
TOTAL 24- HOUR STAFF	11	12.5	16	13.5
HOURS OF CARE/ PATIENT DAY	2.16 Not including 1/2 time activities leader, 1/7 time occupat- ional therap- ist 1/8 time physical therapist 1/3 time dietician	2.17	4.26	5
STAFF BREAKDOWN	1 R.N. 3 L.P.N. 7 Aides	1 R.N. 3 L.P.N. 7 Aides	1 R.N. 3.5 L.P.N. 8 Aides	3 R.N. 10.5 Resident Living Assist- ants. Full-time Activity Dir- ector. Utiliz- ation of Family
TRAINING & COMMENTS	Full-time activity director trained by coordinator	Unit states 2.34/hour per patient day (head nurse not included)		

Source: Linda Fox, R.N., C.C.R.N., Wellspring Gerontological Services.  
Cited in Schultz (1987)

their roles would be those of "enablers, helpers and friends" rather than care takers. This training, provided in the month before Wesley Hall opened, covered a variety of topics including: "An Overview of Dementia", "The Role of Staff as Enablers Rather Than Caretakers", "Task Breakdown as a Technique for Retraining" and "Identifying Strengths and Needs" (the latter in place of focussing on problem behaviours). During the training period, staff spent part of their time with the residents who had been selected to move to Wesley Hall. Coons (1985) reports that:

...as staff learned to know the older people as individuals with special needs and personalities, their attitudes changed and even before the move to Wesley Hall many of the difficult behaviors attributed to the residents began to abate (p.14).

In the 18-bed Special Care Unit described by Peppard (1985, 1986a), staff were also recruited primarily from existing staff. Qualities felt important for selection were: "proficiency in present duties"; "a calm, resilient personality"; "creative ability to act appropriately even in the face of catastrophic reaction" and, as at Wesley Hall, "good interpersonal skills". The staff to resident ratio was 1:5 compared to 1:9 on a regular unit in the nursing home (Peppard, 1984). Three levels of training were provided:

...Level One is for the professional staff (RNs, LPNs, OTs, PTs, Social Service, Activities, Speech). Staff is taken through a program detailing the normal aging process, abnormal aging, and in-depth dementia training which covers etiology, care, and management techniques. Level Two is for the paraprofessional staff, focusing primarily on the aides. They are given the same material as the professional staff but at a less technical level. Level Three is for the remainder of the staff (dietary, maintenance, laundry, and

housekeeping). They are given a basic understanding of the goals of the unit, what they may anticipate when in contact with a dementia victim and how they should conduct themselves in relations to the residents, staff and family. With the exception of Level Three, all trainees are instructed in stress reducing techniques, death and dying issues, and provided ongoing training and support groups. (p. 11).

Several authors (Schultz, 1987) feel activity personnel are especially key in facilities housing early and middle stage Alzheimer's patients. Mace (quoted in Schultz, 1987) recommends that the person planning activities be an occupational therapist since "the skills and resources of the average activities person are too limited to meet the needs of Alzheimer's residents. What people do all day is therapeutically very important and does not resemble the usual activities program at all." (p. 56).

## VI. THERAPEUTIC PROGRAMS

### Key Elements

Weaverdyck and Coons (1988) state that since Alzheimer's is a progressive disease with no known cure, all treatment interventions must compensate for the potential losses of normal aging as well as the confounding factors of the Alzheimer's disease process, such as loss of memory, decreased perception, restlessness, etc.

Mace (1987) states that there is a significant lack in the literature of studies investigation the efficacy of specific treatment interventions. However, several authors have identified the elements that they feel are important in the treatment of individuals suffering from a dementing illness. These include:

### Philosophy of Care

- View each patient as a unique individual with needs, desires and abilities (Peppard, 1986a).
- Provide the structure and an opportunity for the resident to be independent in as many activities especially self care as long as possible (Goodman, 1986).
- Involve the family as much as possible as this can assist them in resolving their guilt feelings, lighten the load for the staff and encourage the maintenance of the patient's individuality (Peppard, 1984).

- Be as flexible as possible in ward rules, routines and procedures so that the changeability of the patients can be accommodated (Goodman, 1986; Ackermann, 1985).

### Evaluation

- Conduct a comprehensive assessment of the individual's past roles in life, past likes and dislikes, past skills and interests so that the care plan can be geared to personal needs and preferences (B.C. Long Term Care Association, 1987; Burnside, 1982; Coons, 1985; Peppard, 1986a).
- Review medical reports, hospital records, test results (Peppard, 1984).
- Institute a program of ongoing evaluation of the changes in functional and cognitive status so that treatment can be geared to the patient's current level of functioning (Weaverdyck and Coons, 1988).
- Evaluate at regular intervals (Peppard, 1984).
- Identify remaining competencies, skills and emotional strengths (Coons, 1985; Weaverdyck and Coons, 1988). Charles et al (1982) describe a number of creative ways of doing this which build upon the patient's past interests. For example, if he/she had been an avid bird-watcher, having the patient describe a particular bird and its natural habitat might be used to test memory and reasoning power. Peppard (1986a) suggests that a useful way of monitoring the residents' progress

is to have them do a self-portrait or write topical poems on a monthly basis. These, she says, provide "visible evidence of how each resident is perceiving the world and themselves". (p.10).

#### Adaptation for Losses

- Compensate for lost skills by breaking a task into its component parts and adapting the components that the patient cannot complete successfully (Coons, 1985; Hall, Kirschling and Todd, 1986; Weaverdyck and Coons, 1988; Rohs, 1986).
- Utilize existing competencies and skills to facilitate maximum functioning e.g. patients can often carry out dressing if clothes are laid out for them in the correct order (Goodman, 1986).
- Provide opportunities for the resident to make choices and maintain as much personal control as possible (Coons, 1985; Ackermann, 1985).
- Use "over-learned" skills to continue functional behaviours e.g. encourage patients to assist in setting table, making their beds, singing, dancing (Goodman, 1986).
- Supply appropriate cues to encourage previous behaviour patterns e.g. encourage patients to carry out grooming activities in the same manner as in the past, such as brushing teeth in front of a mirror (Weaverdyck and Coons, 1998).

- Encourage interaction and interdependence by using group activities that require cooperation and interdependence (Melin and Gotestam, 1981).
- Provide the opportunity to maintain pleasurable leisure and diversional activities such as gardening, crafts and music (Monsour and Robb, 1982).
- Provide the opportunity to assist others and to interact with pets (Coons, 1985).
- Maintain maximum physical functioning through the use of exercises and physical activities (Ackermann, 1985).
- Provide a steady, constant flow of "gentle caring" as reflected in slow movements, patience, touching and extensive non-verbal communication (Burnside, 1982).

#### Behaviour Management

- Recognize that an inability to articulate needs and desires may result in aggressive or withdrawal behaviour (Goodman, 1986).
- Recognize that people with dementia are very susceptible to stress and may overreact to even mild stressors. Consider and modify personal and environmental factors that may trigger catastrophic reactions (Mace, 1987; Peppard, 1984).
- Use people and the environment rather than medication or physical restraints to control behaviour (Peppard, 1984; Coons, 1987; Goodman, 1986; Ackermann, 1985).

- Recognize potential problems and avoid them rather than manage problems. (Coons, 1985, 1987).
- Use distraction, diversion, redirecting, rechanneling and reinterpretation to deal with resistance and agitation and as a means of controlling unacceptable behaviour (Ackermann, 1985; Coons, 1985, 1987).
- Avoid confrontational situations e.g. allow agitated patients who refuse to take off their clothes to sleep in them. After they are asleep shoes or slippers can be removed. They can be bathed and dressed in fresh clothes in the morning (Ackermann, 1985; Goodman, 1986).

These treatment practices may be provided by a variety of professionals (e.g. physicians, nurses, dieticians, pharmacists, music therapists, occupational therapists, physical therapists) and by aide level personnel. They may involve such therapies as: art therapy, music therapy, horticultural therapy, movement therapy, pet therapy, reality orientation, reminiscence therapy, validation therapy, sensory training etc. Many of these therapies have similar goals but use different methods to accomplish these goals. Listed below are some general recommendations regarding therapeutic programs as well as a summary of the few evaluation studies of specific therapies that could be found.

### Programming - General Recommendations

- keep programs simple but not condescending, structured, short (20-30 minutes) and involving groups of not more than 6-8 residents (B.C. Long Term Care Association, 1987; Schwab, Rader and Doan, 1985; Rohs, 1986);
- to the degree possible, involve residents in program planning and decision-making (B.C. Long Term Care Association, 1987);
- provide separate programs for individuals of differing functioning level (B.C. Long Term Care Association, 1987);
- focus on traditional activities ingrained in long-term memory (Rohs, 1986);
- do not place unrealistic expectations to remember the past or plans for a future event (Rohs, 1986);
- minimize visual, auditory and tactile distractions in the environment so patients will focus on the program (Schwab, Rader and Doan, 1985).

### Empirical Studies of Specific Therapies/Programs

#### Sensory Training

Sensory training is a structured group or individual program involving all five senses. Its goal is to increase the regressed geriatric patient's ability to interact with the environment and improve perceptual function (Richman, 1969).

Wolfe (1983) evaluated the effectiveness of a music-based sensory training program in improving environmental awareness, activity participation level, reality orientation and attitudes of nursing home residents exhibiting mild to severe memory loss and confusion. Subjects (n=22) were randomly assigned to experimental and control groups. Experimental subjects (n=11) attended two 30 minute group sessions weekly for 16 weeks. Session activities included identification of self, therapist and other group members; imitation and environmental awareness; auditory discrimination; breathing and relaxation; and identification of tactile, olfactory and gustatory stimuli. Recorded music, taped sounds, percussion instruments, chant and song were used to facilitate environmental awareness and interaction.

The dependent measures used were: Fishback's (1970) Philadelphia Geriatric Center Mental Status Questionnaire (PGCMSQ); a 40-item questionnaire developed by the experimenter to assess subjects' attitude toward staff, the institution, peers and self (ten Yes/No items in each category); a sensory awareness evaluation designed by the experimenter to measure the patients' level of sensory functioning and mastery of the session plan objectives; and a five point scale rating the patients' level of participation.

Over the 16 weeks, the experimental subjects showed an improvement on all four measures. There was no change in the

control group. The authors interpret the results as indicating the effectiveness of the program in improving environmental awareness, activity participation level, reality orientation and attitudes of nursing home residents exhibiting mild to severe memory loss and confusion. It should be noted, however, that it is extremely difficult to ascertain whether it was the total program that produced the effects or specific sub-parts of it (e.g. the music component).

Norberg, Melin and Asplund (1986) addressed this question in a study in which they stimulated two patients in the late stages of dementia by presenting music, stroking them and by presenting objects that could be smelled, touched or watched. Both patients were dependent in all areas of self-care. In other ways their presentation was different. Patient "A" exhibited muscular rigidity with spasmodic jerks and had been mute for one year but her nurses felt she could communicate to some degree through eye blinks. Patient "B" was limp and often babbled incomprehensibly, but her nurses felt she often answered them.

The intervention took 90 minutes and was carried out twice one day and then once the next day for 12 consecutive days (a total of 16 trials). The sequence of stimulation consisted of: (1) Tune #1; (2) Combing hair, looking into a mirror; (3) Tune #2; (4) Touch; (5) Tune #3; (6) Touch; (7) Pause to rest; (8) Touch; (9) Tune #4; (10) Spoon-feeding; (11) Tune #5; (12) Object

presentation; (13) Tune #6; (14) Object presentation; (15) Tune #7.

The dependent measures were silent mouth movements and eye blinking for patient "A" and verbalizations and eye openings for patient "B". In addition, pulse and respiration rate were recorded.

Both patients reacted differently to music than to touch and object presentation. For patient "A" the number of eye blinks during music was less than during touch or object presentation while the number of mouth movements was higher. She also frequently raised her head from the pillow and remained in that position for some minutes during stimulation with music. Patient "B" showed fewer eye openings and verbal reactions during music than during touch and object presentation. For both patients there were no significant differences in reactions to touch and object presentation.

The authors interpret patient "A"'s response to music as "orienting behaviour"; patient "B"'s response was interpreted as relaxation. The authors conclude from these data that patients in the final stage of dementia can be made contact with by means of music.

### Reality Orientation and Behaviour Modification

Reality Orientation utilizes two main approaches: 24-hour RO and Classroom RO. In the former, all staff involved with the resident present basic information about current circumstances (the time, date, place) and correct confused ideation in the course of normal interaction. Schwenk (1979) gives an example of 24-hour RO: An aide at lunch says "Hi, Mr. Bismarck. It is now 12:20 in the afternoon and I have brought you lunch. Today the kitchen is serving tuna sandwiches" instead of her usual "Hi. Here is your lunch." In Classroom RO, classes are usually held daily for 30 minutes. They begin with members greeting one another by name and writing their names on the blackboard. Information from an RO board, usually about the date, time, place and frequently, the weather, is then read out and actually rehearsed with the expectation that group members will recall it. Clocks are sometimes provided so that residents can practice telling the time and calendars are provided so the date can be marked off. Other activities may include constructing scrapbooks and playing word-letter games (Hanley, McGuire and Boyd, 1981; Schwenk, 1979).

The theory behind RO is that by continually orienting patients to their environment and placing them in a group situation where they meet and compete with others, potentially usable parts of their brain which have ceased to function can be reactivated and/or new ways of functioning can be developed to compensate for brain damage (Stephens, 1969).

A number of controlled studies have been conducted to ascertain the efficacy of 24-hour and/or Classroom RO.

Harris and Ivory (1976), for example, compared state hospital patients suffering from syphilis, organic or chronic brain syndrome who were given a five month program of 24-hour RO, Classroom RO and attitude therapy (n=19) with controls (n=16) matched with respect to age and diagnosis. The dependent measure consisted of the Florida State Hospital Patient Behavior Rating Sheet which samples three domains of patient functioning: ward behaviour, verbal orientation behaviour and psychiatric aides' (AT's) impressions. There were no differences in ward behaviours. Statistically significant differences between experimental and control subjects were, however, obtained on six of nine measures of verbal orientation. At post-test more RO subjects than control subjects spoke when the AT stood in front of them; responded with their full names, with the AT's name and with the name of another patient when asked to do so by the AT; complied with the AT's request to hand her a cup or pencil and showed appropriate time orientation.

Brook, Degun and Mather (1975) randomly assigned 18 geriatric admission ward patients suffering from mild to severe dementia to a Classroom RO or a control group. When bi-monthly nurses' ratings of intellectual and social functioning were examined at the end of the 16 week study, it was found that experimental

subjects showed some improvement while controls had deteriorated. More detailed analyses indicated that those patients who initially had relatively high intellectual and social functioning benefitted most from RO.

Citrin and Dixon (1977) compared 12 moderately disoriented patients exposed to both 24-hour and Classroom RO with 13 no-treatment controls. Dependent measures consisted of the ROTP (1973) Reality Orientation Information Sheet (ROIS) and Plutchik et al's (1970) Geriatric Rating Scale (GRS). At the end of 7 weeks, the experimental group showed a significant increase in ROIS scores and a non-significant increase in GRS scores. Controls showed a decrease on both measures.

Woods (1979) compared 14 disoriented nursing home residents randomly assigned to a Classroom RO program, a "social therapy" group and a no-treatment control group. After 20 weeks, RO residents had improved significantly more than controls on the Wechsler memory scale as well as on tests of information and orientation. No significant between group differences were apparent, however, on behavior ratings made with a scale similar to that used by Brook et al (1975). All three groups, in fact, showed a significant deterioration of behaviour over the course of the study.

Hanley, McGuire and Boyd (1981) studied residents of two psychogeriatric hospital wards and two nursing homes who were

randomly assigned to experimental (n=28) and control (n=29) groups balanced for age, sex and degree of dementia. After 12 weeks of Classroom RO, experimental subjects showed an improvement in the verbal orientation subtest of the Koskela Test (Ferm, 1975) but there were no significant changes on the memory, paired associates or concentration subtests. There was also no significant changes on any of the behavioural measures. These measures included Plutchik et al's (1970) Geriatric Rating Scale subscales concerned with withdrawal/apathy, antisocial/disruptive behaviours and ADL. They also included a 25-item orientation questionnaire which yields separate scores for orientation to time, place and person.

In a second study, Hanley, McGuire and Boyd divided 15 hospital patients who displayed severe spatial disorientation to the ward environment into three groups of five balanced for sex and degree of dementia. Group 1 received 12 weeks of Classroom RO; Group 2 received 12 weeks of Classroom RO plus ward training sessions on weeks 4, 5 and 7; Group 3 was a no-treatment control group. The ward training was found to be effective in improving level of ward orientation. The RO training appeared to have had no significant effect on verbal orientation as measured by the 25-item questionnaire.

Other studies yielding negative effects include those of Barnes (1974), Hogstel (1979), Zepelin and Wade (1975) and Zepelin, Wolfe and Kleinplatz (1977).

In an attempt to reconcile these conflicting results, Schwenk (1979) pointed out that a majority of the positive studies used a combination of 24-hour and Classroom RO while a majority of negative studies used Classroom RO only. She suggest that the effect of the two forms of RO might be quite different.

Twenty-four hour RO, she contends, may teach staff how to communicate more effectively with confused patients. The drill of Classroom RO, on the other hand, may be less helpful.

Williams, Reeve, Ivison and Kavanagh (1987) come to a similar conclusion. Coons (1985) also argues against Classroom RO. She claims that experience at Wesley Hall has demonstrated that many of the traditional ways in which reality orientation and behavioural modification are applied are inappropriate for dementia patients.

...Emphasis on time, date, place, etc. as stressed in some forms of reality orientation is too demanding, at times overwhelming, and unimportant if it has no immediate relevance for the individual...We question the use of traditional forms of behavioral modification for this group also. Rewards on Wesley Hall are given in the context of normal everyday living as opposed to the more artificial and judgmental system of behavior modification. It seems unrealistic to expect severely impaired persons to remember the interventions made by staff in such a program or to apply them to future responses. (p.14).

There are several studies in the literature in which reality orientation has been used in less traditional ways -- specifically, supplemented by music and/or dance. These too,

however, yield conflicting findings. Riegler (1980), for example, compared an 8 week program of music-based RO with traditional RO sessions without music. Subjects were eight nursing home patients exhibiting a moderate to severe degree of confusion, disorientation and memory loss. Half were assigned to the experimental group and half to the traditional RO group. Activities common to both groups included reading of an RO board which contained the name of the institution, the date, year, weather, next holiday and next meal as well as reading, writing, and spelling of group members' names, the day of the week, the months and the seasons of the year. In both groups, pictures and poetry were used to stimulate patients. Additionally, experimental subjects listened to and discussed music written about a particular time of the year or place, sang and played rhythm instruments in accompaniment to songs and jingles dealing with members' names, the day, date and year. Pre- and post-test measures consisted of Fishback's (1971) Philadelphia Geriatric Centre Mental Status Questionnaire (PGCMSQ) and Plutchik et al's (1970) Geriatric Rating Scale (GRS).

Subjects exposed to the music RO program showed a marked improvement over the 8 weeks of the study in PGCMSQ scores and a slight but not statistically significant increase in GRS scores. Among controls exposed only to the traditional Classroom RO, there was no change in PGCMSQ scores and a slight though not significant decrease in GRS scores.

Bumanis and Yoder (1987), on the other hand, found no significant differences between five nursing home patients exhibiting mild to severe degrees of confusion, disorientation and memory who were exposed to a two week program of music and dance-based RO and matched controls (5 in each group) given no treatment or traditional Classroom RO. Dependent measures included Kahn, Goldfarb and Pollack's (1960) Mental Status Questionnaire (MSQ) and Fink et al's (1952) Face-Hand Test.

#### Other Therapies

While other therapies are mentioned in the literature as having potential for use with dementia patients, and while there are some subjective and/or descriptive reports of their effectiveness, to date only one article has been discovered in which one of these other therapies has been subjected to empirical test with this client group. The therapy in question was Validation therapy (Feil, 1982).

According to Feil (1985), disoriented very old people enter a new life stage in which the developmental task is to confront what she terms "resolution versus vegetation". By this she means they must resolve old conflicts and find integrity in present time. Validation therapy purportedly helps them to do this by listening to them empathetically and using specific verbal and non-verbal communication strategies to fit their particular level of disorientation (See Table 5).

TABLE 5

## FEIL'S FOUR LEVELS OF DISORIENTATION

	MILD CONFUSION	TIME CONFUSION	PERPETUAL MOTION	VEGETATION
<b>BASIC HELPING CLUES</b>	- use who, what, where and when type questions - use minimal touch - maintain social distance	- use feeling words (I see...) (I feel.) - use touch and eye contact	- use touch and eye contact - pace to person's movements	- mirror movements - use sensory stimul- ation
<b>ORIENT- ATION</b>	- keeps time - holds onto present reality - realizes and is threatened by own dis- orientation	- does not keep track of clock time - forgets facts, names and places - difficulty with nouns increases	- shuts out most stimu- lation from the outside world - has own sense of time	- will not recognize family, visitors, old friends or staff - no time sense
<b>BODY PATTERNS muscles</b>	- tense, tight muscles - usually continent - quick, direct movements - purposeful gait	- sits upright but relaxed - aware of incontinence - slow, smooth movements	- slumped forward - unaware of incontinence - restless, pacing	- flaccid - little movement - no effort to control continence - frequent finger movements - does not speak
<b>vocal tone</b>	- harsh, accusatory and often whining	- low, rarely harsh - sings and laughs readily	- slow, steady	
<b>eyes</b>	- clear and bright - focussed, good eye contact	- clear, unfocussed - downcast; eye contact triggers recognition	- eyes shut (face lacks expression) - self stim- ulation is minimal	- usually closed
<b>EMOTIONS</b>	denies feelings - usually carries a cane, blanket, purse or sweater	- substitutes memories and feelings from past to present situations	- demonstrates sexual feelings openly	- diffi- cult to assess
<b>PERSONAL</b>	- can do basic care - seeks personal reminders	- misplaces personal items often - creates own rules of behavior	- few commonly used words	- responds to tone
<b>COMMUNI- CATION</b>	- positive response to recognized roles and persons - negative response to those less oriented	- responds to nurturing tone and touch - smiles when greeted	- is not motivated to read or write	- none readily apparent
<b>MEMORY AND INTELL- ECT rules</b>	- can read and write unless blind - sticks to rules and conventions	- can read but no longer writes legibly - makes up own rules	- early memories and universal symbols are most meaningful	- diffi- cult to assess
<b>HUMOR</b>	- some humor retained	- will not play games - humor not evident	- laughs easily often unprompted	- diffi- cult to assess

To test the efficacy of validation therapy, Miller (1987) assigned 14 moderately confused nursing home residents to a six-week program of validation therapy or reality orientation. Consistent with findings from other studies, significant improvement in participants in the RO group was limited to orientation. There was no major change in morale or behavioural functioning. There were no significant improvements, however, in morale, behavioural functioning or orientation for subjects in the validation therapy group.

## V11. CONCLUSIONS

From this review of the literature, it is apparent that there is a major trend in the long-term care industry towards developing Special Care Units for dementia patients. While there is not universal agreement as to the need for or appropriateness of such units, a sizeable number of experts seem to feel that there is a place for them in the continuum of care.

Arguments in favour centre on the need to segregate the disturbed/disturbing who are distressing to the mentally intact and their families, concern over the difficulty of providing quality of care when the mentally impaired and intact are mixed and the opportunity such units provide for developing a supportive environment as well as expertise in the care of dementia patients.

Still, there are important gaps in the research literature. We do not know, for example, whether Special Care Units in Intermediate Care facilities differ in important ways from those in Extended Care facilities. Potential differences between the two are not even mentioned in the literature.

We do not know the implications for the Unit of client change over time. Only one author, Clarke (1982), alludes to potential problems when he states:

...Five years later, we still operate the special therapeutic unit for residents suffering from severe senile dementia, but it has changed. As time has passed, the

residents have become more demented and more physically ill...Therefore, we have had to convert the unit from an intermediate care unit into a skilled nursing unit...The staff on the floor had to be increased accordingly.

We also have only limited information concerning the cost-benefits of Special Care. As Mace (1987) notes:

Specialized care may benefit the patient; may benefit the family (by providing respite); may benefit the residents of a facility who are not cognitively impaired; may benefit the provider (by opening a new market), or may benefit the taxpayer (through cost savings). Care might benefit the patient, but cost the taxpayer or family; or it might benefit the facility more than the resident. (p.11).

As regards benefits to the patient, who are, after all, the most important group, to date, the most commonly reported are:

- 1) changes that may have resulted from removal of excess disabilities such as medication reactions, concurrent illness, stress and sensory impairment, and
- 2) improvements in social functioning - including more socially appropriate behaviour.

Mace (1987) feels that the latter are in large measure a result of changes in the physical and psycho-social environment. This is certainly in keeping with Lawton and Simons (1988) Environment Docility Hypothesis which posits that as competency decreases one's vulnerability to one's environment increases.

Just what adjustments to the physical environment are critical for producing positive change is, however, still unclear. While many recommendations have been described in this report for

improving orientation, reducing accidents, reducing the frequency of unauthorized exiting behaviour, etc., few of these recommendations have been put to empirical test.

With the exception of Reality Orientation, the same holds true for therapeutic programming.

In view of these gaps, it is essential that any organization considering the development of a Special Care Unit proceed with some degree of caution. A watching brief must be kept of the research literature. Consideration must be given to incorporating a systematic and well-conceived evaluation component in any development plan.

It is only by doing so that the knowledge base can be expanded such that we can ensure the best possible care for long-term care patients, both those who are mentally impaired and those who are not.

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