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# Attributes, Perceptions, and Behaviours of Staff Caring for Older Adults with Dementia in Special Care Units and a Residential Care Setting

by

Corinna Andiel 

A thesis submitted to the Faculty of Graduate Studies and Research in partial fulfillment of the requirements for the degree of Doctor of Philosophy

Faculty of Rehabilitation Medicine

in

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled Attributes, Perceptions, and Behaviours of Staff Caring for Older Adults with Dementia in Special Care Units and a Residential Care Setting by Corinna Andiel in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Rehabilitation Sciences.

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This thesis is dedicated to the memory of
Wolfgang Joseph Andiel
1941-1995

**Abstract**

The goals of this study were twofold: To assess differences over time in staff attributes, perceptions and behaviours at McConnell Place North (MPN), a residential care centre specializing in Alzheimer care, and to assess differences in the attributes, perceptions and behaviours between staff working at MPN and two Special Care Units (SCUs). Staff measures of knowledge, attitudes, stress, burnout, and turnover/absenteeism, as well as resident restraint and activity involvement at MPN and two SCUs were collected approximately six months (time 1) and one year (time 2) after MPN's opening date in 1995. Sixteen MPN staff and 35 SCU staff participated in the study at both time 1 and time 2. In addition, data on restraint use and activity involvement were collected for 29 residents from MPN and 21 residents from the SCUs at both data collection points.

There were no differences over time or between care settings in knowledge of Alzheimer disease or attitudes. Moreover, scores on the knowledge and attitude questionnaires were favorable for staff working in both MPN and the SCUs. Differences in stress levels emerged between MPN and SCU staff, with MPN reporting lower levels of stress than SCU staff, as measured by the Caregiver Stress Inventory (Maas, 1988), as well as the Maslach Burnout Inventory (Maslach & Jackson, 1981). No differences over time or between the care settings were found, however, in staff absenteeism. Staff turnover rates at MPN and SCU A were roughly 30%, in contrast to SCU B's turnover rate of only four percent. Behavioural observations revealed that, overall, MPN residents were more active than SCU residents, as measured by their periods of inactivity, participation in leisure activities, and communication with others. Given that MPN residents were less functionally and cognitively impaired than SCU residents, it is not possible to attribute differences between MPN and the SCUs to differences in the models of care. Nevertheless, the results of this study generated a number of hypotheses for future

research concerning how the physical design, resources and staffing of residential care may influence staff stress levels, use of restraints, and resident engagement in activities.

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While writing this dissertation, I lost my father, Wolfgang Joseph Andiel. He was and continues to be a tremendous source of inspiration; his ability to combine hard work with the fullest enjoyment of life is a quality I will never forget. The dedication of this dissertation stands as an expression of my enduring gratitude to him.

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# CHAPTER 1: INTRODUCTION

It is estimated that 161,000 Canadians have Alzheimer disease, and the number of cases is expected to more than double by the year 2021 (Canadian Study of Health and Aging Working Group, 1994). Alzheimer disease is characterized primarily by deterioration of memory and cognitive functioning (Kaplan & Sadock, 1991). In addition, it is characterized by a gradual loss of daily functioning, such as toileting, bathing and dressing (Auer, Sclan, Yaffee, & Reisberg, 1994; Eisdorfer et al., 1992) and is commonly manifested in a variety of behaviour symptoms, including wandering, agitation, apathy, hoarding and rummaging (Cohen-Mansfield, 1986; Deutsch & Rovner, 1991; Gilley, 1993; Patterson & Bolger, 1994).

Staff providing direct care have the most frequent contact with residents residing in continuing care facilities. Therefore, they offer the greatest potential for influencing resident behaviour, either beneficially or detrimentally (Burgio & Burgio, 1990). Thus, when caring for someone with Alzheimer disease, it is critical that staff have the necessary knowledge and training to address the memory and cognitive changes and manage the behaviour problems often associated with the disease (Cohen, 1994; Coulson, 1993; Maslow, 1994; McCracken, 1994). Delivering appropriate care to persons with Alzheimer disease has proven to be a significant challenge for health care workers. The lack of success in managing behavioural and cognitive changes that accompany Alzheimer disease may, in turn, lead to negative effects on staff and residents.

## The Role of Staff Training and Models of Care

Two elements have been the focus of much of the literature on care delivery to persons with Alzheimer disease in continuing care settings, namely staff training and the models of care under which they operate. There is a growing body of research to support the idea that staff training is essential when caring for persons with Alzheimer disease (Burgener & Shimer, 1993; Chappell & Novak, 1992; Feldt, Ryden, & Faan, 1992; Monahan, 1993; Netten,1993). Other issues have emerged in the gerontological literature

concerning what model of care delivery is most appropriate for older adults with Alzheimer disease and how that model should be implemented. Researchers and clinicians in North America have begun questioning whether effective delivery of care to persons with Alzheimer disease is hampered by the medical model that typifies traditional long-term care facilities because, under this model, the assumption is made that the resident is physically ill (Wells & Jorm, 1987; Smith & Eggleston, 1989). Critics of the medical model argue that, aside from the dementia per se, older adults who have Alzheimer disease tend to be physically healthy and, therefore, do not require extensive medical intervention (Smith & Eggleston, 1989). Actually, these persons often are admitted to formal care settings because of behavioural problems, such as aggression, wandering, and delusions, rather than for medical reasons (Cohen et al., 1993; Pruchno, Michaels, & Potashnik, 1990; Mintzer et al., 1993; Teri & Lodgson, 1990). Inattention to the non-medical aspects of the disease can have negative consequences for the quality of life of residents, as exemplified by Brannon, Streit, and Smyer's (1992) research, which showed that in traditional nursing home settings, staff spend little time interacting with residents, other than in the context of providing direct care. Even more disturbing are the findings from Burgio et al.'s (1994) real-time behavioural observation study of 11 nursing home residents which showed that residents were engaged in no activity for 87% of the time and physically restrained for 84% of the time they were observed.

**Training and the Model of Care in Special Care Units**

Special Care Units (SCUs) were established over two decades ago in recognition of the special needs of residents with dementia and the concern that staff who care for dementia residents may not be adequately trained (Berg et al., 1991; Maas, 1988). Thus, one of the purported advantages of SCUs is that staff, consisting primarily of medically oriented professionals such as nurses and nurse aides, are specially trained to address the memory and cognitive changes and behavioural problems that accompany Alzheimer disease (Rabins, 1987). Despite establishing SCUs as a means of delivering more

appropriate care to persons with dementia, the lack of training and preparedness of staff working in SCUs is disappointing. The empirical research reported thus far suggests that the training staff receive is insufficient. In their survey of 12 SCUs, Sand, Yeaworth, and McCabe (1992) found that, although more attention was paid to staff selection, education and training in SCUs compared to traditional long-term care facilities, only 14 - 28% of the staff reported receiving some form of special staff education. Similarly, Burgener and Shimer (1993) compared the behaviours, knowledge of dementia and education levels of staff working on units specifically designed to care for cognitively impaired elders to those of staff working on general units that included demented older adults. They found no difference between these two types of units on any of these caregiver characteristics.

In addition, the research suggests that the principles of the SCUs are not being translated into appropriate care practices, particularly with regard to behaviour management. Few studies of SCUs demonstrate reduced use of chemical and physical restraints as a means of controlling problem behaviours (Lindeman & Montgomery, 1994). For instance, in a study involving 307 residents from 31 SCUs and 318 residents from 32 traditional nursing home units, Sloane et al. (1991) found that both physical and chemical restraints played a prominent role in the management of dementia nursing home residents. The authors report that chemical restraints were used at a rate of 50% and physical restraints were used at a rate of 18% in SCUs.

One of the reasons for the lack of overwhelming success of SCUs may stem not only from the lack of special training of the staff, but also from the conflict between the philosophy of care typically espoused on these units and the orientation of the formal caregivers' previous training and work experiences. The SCU staff consist primarily of medically oriented professionals, such as nurses and nursing aides. Because their training evolves from the medical model, they have been previously trained to view the resident as someone who has an ailment, and the focus is on treating this ailment and providing medical and nursing care, rather than addressing all aspects of the resident's well being

(Hall & Buckwalter, 1991; Smith & Eggleston, 1989). Thus, there exists a conflict between the care approach encouraged in the SCUs and how the staff have been trained in the past to provide care. One consequence of this conflict is that formal caregivers oriented toward the medical model may experience difficulty managing some of the non-medical aspects of Alzheimer disease, such as behaviour problems, which require flexible, non-regimented approaches to care (Maslow, 1994; Taylor, Moiso, LeVasseur, & Simmons, 1991).

## Training and the Model of Care in Residential Care Facilities

As a consequence of this growing concern about the effectiveness of traditional continuing care facilities and SCUs, an increasing number of residential care settings are being developed in North America. The model of care of these residential facilities bears a striking resemblance to the principles of care outlined for SCUs. They espouse a social model of care and focus on maximizing the residents' quality of life rather than addressing the disease per se (Jesion & Rudin, 1983). The residents' quality of life is enhanced by encouraging them to be as independent and active as possible. Moreover, procedures and routines do not take precedence over the needs of the residents (Lindesay, Briggs, Lawes, Macdonald, & Herzberg, 1991). Rather, as Lyman (1989) recommends, the program is designed to fit the residents, rather than requiring the residents to fit the program. In other words, the social model is "client centered". The priority of residents' needs is manifested in several ways. For instance, to help residents maintain the highest levels of functional independence possible, staff provide minimal assistance with activities of daily living, even though in many cases staff could save time if they completed residents' activities of daily living for them. In other cases, residents may decide for themselves when to wake up and when to go to sleep. In some programs, such as the Minna Murra Lodge in Australia, staff obtain detailed social histories of residents upon admission, so that activities programming can be tailored to the tastes and preferences of the residents. In addition, staff are told that dealing with residents' behavioural problems

depends on the abilities of the staff to learn effective behavioural management techniques rather than the ability of the residents to change (Cohen & Day, 1993).

Residential care facilities are unique in that care is provided in a free-standing, home-like setting rather than an institutional setting. That is, the physical and social environments are designed to approximate as closely as possible a "normal" environment (Jesion & Rudin, 1983). They are also unique in that the belief that programs for older adults with dementia are most likely to succeed by employing nontraditional staffing patterns (Mace, 1989). Specialized training in the care of persons with dementia is considered crucial, but the medical orientation of that training is considered by some as neither necessary nor sufficient for the delivery of quality care (Meyer et al., 1990; Sandel & Possidente, 1994; Sand et al., 1992; Sixsmith, Stilwell, & Copeland, 1993). Thus, some of the most evident changes associated with the social model of care in residential care facilities include how staff are selected and trained, and the kinds of duties they perform in these settings. Emphasis is placed on hiring persons based on their interest in and enthusiasm for working with demented older adults, and their willingness to adopt the program's philosophy of care (Sandel & Possidente, 1994). Advocates of this approach argue that the type of attitudes persons often develop when working in medically-based settings is inappropriate for the care of persons with dementia. One of the purposes of the unconventional hiring practices is to avoid recruiting persons who have acquired negative biases and habits associated with training under the medical model (Cohen & Day, 1993).

## Pros and Cons of Residential Care Facilities

Critics of the residential care setting argue that the delivery of quality care to residents may be seriously jeopardized because personality characteristics and attitudes of staff take precedence over their background medical training. Previous research has demonstrated that hiring younger, less experienced employees is associated with higher turnover (Brennan & Moos, 1990), and that registered nurses in both SCUs and

traditional nursing home units are significantly more satisfied with their background training and score higher on tests of knowledge of Alzheimer disease than other nursing staff (Maas, Buckwalter, Swanson, & Mobily, 1994). Moreover, in a survey of 116 staff from a 300-bed nursing home, Hoffman, Platt, and Barry (1987) found that three-fourths of the residents cited by nursing aides as being "difficult" were not perceived this way by nurses.

Proponents of the use of professional staff also discount the claim that an orientation toward the medical model will affect care negatively. For instance, in a comparison between SCU staff and staff working in intermediate or skilled care facilities, Wimberley and Kutner (1994) note that one of the biggest differences between these two groups is not that the SCU staff have superior medical training, but that the SCU staff provide more structure and activities for residents than non-SCU staff. In addition, SCU staff are more accepting of "bizarre" resident behaviours than non-SCU staff. Similarly Åström, Nilsson, Norberg, Sandman, and Winblad (1991) found that, in a longitudinal study of 60 nursing staff from a nursing home, somatic long-term care clinic and a psychogeriatric care clinic, registered nurses showed significantly more positive attitudes toward dementia residents than nurses' aides and licensed practical nurses.

However, Sheridan, White and Fairchild's (1992) survey of 530 nursing staff from 25 nursing homes revealed that poor resident care was associated with staff "maintenance" attitudes that often are associated with the medical model, such as the attitude that resident participation in social and personal care activities should be discouraged. In addition, Gutman and Killam (1989) surveyed six SCUs and asked staff members whether they were satisfied with the number and/or type of staff on their units. The proportion of respondents who felt that the number and/or type of staff was sufficient ranged from a low of 25% to a high 83%. When they were asked what type of additional staff they would like, "direct care staff" and "activity and recreation workers" were cited four times more often than "RN or equivalent".

With regard to staff type and its effect on interactions with residents, research suggests that the social model's goal of enhancing resident-staff interaction is not easily achieved between residents and professional nurses. Sixsmith, Hawley, Stilwell, and Copeland (1993) compared staff's self-report diaries of care delivery in three nursing homes based on the social model to those in one traditional nursing home. Behavioural observations were also made in the one social model-based nursing home, along with two other traditional nursing homes. The purpose of the study was to determine if hiring generic staff in the social model-based nursing homes to provide the routine health and comfort care to residents would lead to the delivery of more "positive care", such as more social interaction and group activities, by the nursing personnel. The researchers found that there was no correlation between the increase in staff and the proportion of staff time directed toward positive care. In fact, they found that when generic staff were hired, professional nurses spent more time engaged in administrative and indirect work rather than interacting with the residents.

However, the research does not provide unequivocal support for the notion that it is difficult to modify the behaviour of personnel with medical backgrounds to be consistent with the social model of care. Lindesay et al. (1991), for instance, used the Short Observation Method, a direct, non-participant observation tool, to record the activities of residents in a nursing home unit based on the social model and two traditional psychogeriatric long-stay wards. In all units, traditional nursing staff were employed, but in one unit, staff operated under the social model of care. There were no differences in resident length of stay, age, primary diagnosis, or cognitive impairment between these units. The authors report that 48% of the residents from the social model were engaged in some form of unorganized activity, as compared to none of the residents from the first psychogeriatric ward and 10% from the second ward. In addition, significantly more staff-resident interaction occurred on the unit based on the social model of care than on the traditional units. These data suggest it is possible to operationalize a social model of care

using employees with previous training under the medical model.

## Research and Residential Care Facilities

To date, only a small body of research on the care practices of residential care facilities for Alzheimer residents exists. Results of research on the ability of staff in residential care facilities to provide high quality care suggests that this alternative approach merits further consideration, although support is not absolute.

A review of the literature revealed no studies in which staff knowledge of Alzheimer disease was assessed. Instead, the focus of staff evaluation is on indicators of staff stress. The results of these studies vary in their findings. In an evaluation of 50 Swedish residential-based group dwellings for dementia residents, personnel reported that their jobs were stimulating. However, they also reported feelings of exhaustion, suggesting that there may be a high risk of burnout in these settings (Johansson, 1990). Similar findings were reported in an evaluation of Woodside Place, a residential alternative for care of persons with Alzheimer disease (Hoglund, Dimotta, Ledwitz, & Saxton, 1994). Care attendants, who did not have medical backgrounds, reported high job satisfaction accompanied by high stress levels.

However, Meyer et al. (1990) reported high staff morale and very low staff turnover in a free-standing residential care facility for persons with early Alzheimer disease. The authors speculated that the high morale and low turnover may be a result of the caregivers having no previous experience with the medical model, and thus no need to unlearn previous work habits. In addition, the original employees received a two week training session (Cohen & Day, 1993) and felt that they were part of a special project. Similar positive findings were reported in the evaluation of four social model-based group homes for people with dementia in Sweden (Malmberg & Zarit, 1993). None of the staff had previous experience working with dementia residents (though some had worked previously in nursing homes), and training programs ranged in length from two to four weeks. The authors reported that, after one year, staff tended to rate their work positively,

with mean ratings of approximately 2 on a scale of 1 to 5, with 1 as the most positive rating. However, they also reported more stress after one year, although even turnover rates were very low: at the four and five year follow-ups, 33 of the 48 original staff members remained.

In one of the few studies to include a comparison group, no statistically significant differences in staff satisfaction (as measured by the Minnesota Satisfaction Questionnaire), psychological well being (as measured by the General Health Questionnaire), absenteeism or turnover rate were reported between staff working in a nursing home unit based on the social model and staff working in two traditional psychogeriatric long-stay wards (Lindesay et al., 1991). However, there was a trend for staff from the social model to score higher on general satisfaction than staff from the traditional facilities. Because the sample size was small (n=50), it is possible that the difference would have been statistically significant had the sample size been larger.

One of the stipulations of the social model is that resident quality of life is enhanced by increasing the amount of social contact between staff and residents, and by providing residents with more opportunities for participation in spontaneous and organized activities. As noted earlier, residents in both traditional long-term care institutions and SCUs have been shown to be inactive for a majority of their time awake. Conceivably, non-medical staff working under the social model would be more apt to encourage non-medically oriented interaction than staff accustomed to providing primarily medical care. Anecdotal evidence suggests that residents in residential facilities engage in a variety of ordinary daily activities that residents in SCUs or traditional nursing home units typically do not, such as housekeeping, picking flowers, and meal preparation (Beck-Friis, 1988; Malmberg & Zarit, 1993). However, no empirical data has been reported thus far.

In a Swedish study, the behaviours and social functions of residents residing in a traditional nursing home setting were compared to the functions of residents in a collective living unit based on the social model. Home helpers, as opposed to medical personnel

were given a month's special training and employed at the collective living unit, while the nursing home employed traditional nursing staff (Kihlgren et al., 1992). Staff in both locations participated in semi-structured interviews over one year to assess changes in the residents' behaviours. While staff at the nursing home reported that all residents had deteriorated with respect to their social abilities and social activities, staff at the collective living unit reported that the residents had improved. However, scores on the Multi-Dimensional Dementia Assessment Scale revealed that behavioural disturbances increased over time at the collective unit, while they decreased at the nursing home. These results should be interpreted cautiously because data were collected from a sample of only five residents from each type of dwelling, and no reports on the reliability and validity of the Multi-Dimensional Dementia Assessment Scale were provided.

Little information exists regarding residential care facilities' use of physical and chemical restraints for managing resident behaviours. Restraint use, particularly the use of pharmacological restraints, is a medically-oriented approach to behaviour management. Thus, it is reasonable to expect that the use of restraints would be minimized in residential care facilities. This assumption remains to be supported, however, because only anecdotal reports on the use of restraints in residential care facilities exist. For instance, in their study on residential group homes in Sweden, Malmberg and Zarit (1993) observed that the use of psychotropics was minimal and that dosages were low or used only when needed. Similarly, in the Seward Lodge, Redcourt and Highgrove House study, Sixsmith, Stillwell, et al. (1993) stated that there was minimal use of behaviour-controlling drugs at Highgrove House, with no data indicating the types or dosages of drugs actually used in any of the settings.

In summary, only a handful of descriptive studies on residential care facilities and their approach to staffing exist. Consequently few, if any, firm conclusions can be drawn about the effectiveness of these facilities and their associated non-traditional staffing practices. It is interesting to note that, like the research on SCUs and other traditional

models of care, the research on residential care facilities is characterized by a number of methodological restrictions. Some of these restrictions include small sample sizes, little consistency in the outcome measures and measurement tools used by researchers, and the lack of control groups. These limitations prohibit researchers and clinicians from drawing firm conclusions about the effectiveness of the social versus medical model.

## Purpose

The general purpose of this study is to investigate staff attributes, perceptions and behaviours at a residential care centre specializing in Alzheimer care and two Special Care Units (SCUs) within traditional nursing home settings. This study has two primary objectives, as outlined below:

Objective 1: To assess differences over time in staff attributes, perceptions and behaviours at McConnell Place North (MPN) in Edmonton, Alberta, Canada. This centre, modelled after Woodside Place in Oakmount, Pennsylvania, is the first of its kind established in Canada. It opened and began assessing residents for gradual admission in the Fall of 1995. Multiple measures of staff attributes were taken approximately six months (time 1) and one year (time 2) after the centre's opening date. Based on the arguments made by proponents of residential care facilities, the hypotheses tested were:

a) Staff knowledge of Alzheimer disease would increase between time 1 and time 2 as staff worked within a setting that provides ongoing education.

b) Staff attitudes toward caring for the residents would become more positive between time 1 and time 2 as staff combined their in-house training and experience working within the social model of care.

c) Staff perceptions of the frequency and difficulty of managing resident behaviours would decrease between time 1 and time 2 as staff combined their training and experience working within the social model of care.

d) Staff stress would decrease between time 1 and time 2 as they combined their training and experiences working within the social model of care.

e) Staff absenteeism and turnover would remain stable between time 1 and time 2 as staff combined their training and experience working within the social model of care.

f) Physical restraint use would remain prohibited while medication use would decrease between time 1 and time 2 as staff combined their training and experience working within the social model of care.

g) Resident engagement in activities would increase between time 1 and time 2 as staff discovered meaningful ways to occupy residents.

Objective 2: To assess differences in staff knowledge, attitudes, perceptions, stress and turnover/absenteeism, as well as resident restraint and activity involvement between MPN and the SCUs. Data were collected at two time points separated by a six month interval. MPN and SCU staff knowledge, attitudes, perceptions, stress and turnover/absenteeism, as well as resident restraints and activity involvement were assessed at both time points. The attributes, perceptions, and behaviours of the MPN staff and residents were then compared to those of the staff and residents of the SCUs and the following hypothesis was tested:

Differences in staff knowledge, attitudes, perceptions, stress and turnover/absenteeism, as well as resident restraint and activity involvement would exist between MPN and SCUs.

## CHAPTER 2: METHOD

### Participants

This study was conducted in conjunction with The Capital Care Group (TCCG) in Edmonton, Alberta. The Capital Care is a publicly-owned, multi-site provider of continuing care to persons who have chronic diseases and disabilities. This organization operates continuing care centres at eight sites. At the time the study was conducted, four sites had an SCU available for long-stay care of persons with a dementia or related illness, and provided programs designed to meet the special needs of residents under

their care. No behavioural observations were made on two of the four sites because there were too few dementia residents who were ambulatory and did not have any other complicating diagnoses residing on these units. Staff questionnaire data were collected on one of these two units in which no behavioural observations were made. However, the data were not included in the analyses because only a very small fraction of the staff working on the unit (n=3) completed the questionnaires at both time 1 and time 2. Data from both staff and residents on the remaining two sites were collected and included in the analyses.

## Staff

Staff working under the residential model of care were drawn from TCCG' s MPN in Edmonton, which employs approximately 25 full- and part-time "care attendants". In addition, full- and part-time nursing staff from two SCUs under TCCG's management participated in the study. All full- and part-time day- and evening-shift care attendants from MPN and nursing staff (Registered Nurses, Licensed Practical Nurses, and Nursing Assistants) from the two SCUs were invited to participate in the study. Sixty-nine staff members agreed, including all but one ($n_1$=22) of the care attendants from MPN (96%) , and the vast majority (89%) of nursing staff members from each of the SCUs ($n_2$=24, $n_3$=23). All staff members read and signed the consent form provided in Appendix A. Of the 69 staff members who entered the study, six (9%) from MPN, and 12 (17%) from the SCUs did not complete the questionnaires at time 2. Completion of the questionnaires at time 2 was not related to care setting (MPN, SCU A, SCU B), $x^2$ (2, N = 68) = 2.99, p < .05. Of the MPN staff who did not complete the questionnaires at time 2, one went on sick leave, two quit, one attended a rehabilitation program at the Workers' Compensation Board, one began working nights, and one took a leave of absence. Of the SCU staff who did not complete the time 2 questionnaires, one quit, two went on sick leave, one began working nights, four were "bumped" (a common nursing practice which permits nursing staff whose positions are being terminated to retain employment by displacing, or

bumping, co-workers who have lower seniority within the healthcare organization), one became the unit clerk, one went on maternity leave, and one retired. In addition, the researcher excluded one participant because the staff member did not complete most of the questionnaires and selected "don't know" for a majority of the items on the few questionnaires that were completed.

Table 1 summarizes the staff characteristics. All the staff who completed questionnaires at time 1 and time 2 were women. SCU staff tended to be older and to have more experience working with older adults as paid employees in continuing care than staff working at MPN. On average, staff worked approximately 30 hours per week in MPN ($\underline{M}$ =31.3, $\underline{SD}$ = 14.7), as well as in the SCUs ($\underline{M}$ = 32.6, $\underline{SD}$ = 10.6). Almost none of the staff reported working in other continuing care centres, with the exception of one person at MPN, who reported working elsewhere 17.5 hours per week, and three people at the SCUs, who reported working elsewhere for 36, 30, and 15 hours per week in other continuing care settings.

## Residents

Residents from the two types of care settings (i.e., MPN vs. the SCUs) also were required for this study in order to assess staff behaviours regarding resident involvement in activities. Inclusion criteria for the study required that residents were fully ambulatory or able to ambulate with minimal assistance, and that they had lived in the centre for at least two months prior to the start of the study. In addition, residents were required to have a diagnosis of probable Alzheimer disease (McKhann et al., 1986) or related dementia, recognizing that standards for the diagnosis of dementia vary among physicians. Residents with other major acute or chronic illnesses, such as stroke, Parkinson's disease, frontal lobe injury and post-myocardial infarction were excluded from the study. Family members of 34 residents from MPN and 32 residents from the SCUs signed consent forms and granted permission to include their relatives in the study. A copy of the consent form is provided in Appendix B.

Table 1. Characteristics in percent and frequency (in brackets) of MPN and SCU staff who completed questionnaires at time 1 and time 2.

| | MPN (n=16) | SCUs (n=35) |
|---|---|---|
| Age | | |
| <25 | 31 (5) | 6 (2) |
| 26-35 | 25 (4) | 17 (6) |
| 36-45 | 25 (4) | 23 (8) |
| 46-55 | 13 (2) | 49 (17) |
| 55+ | 6 (1) | 6 (2) |
| Educational level | | |
| Nine years or less | 6 (1) | 0 (0) |
| Partial high school | 19 (3) | 31 (11) |
| High school | 44 (7) | 17 (6) |
| Trade/technical school | 6 (1) | 11 (4) |
| Partial college/university | 6 (1) | 11 (4) |
| College/university | 19 (3) | 23 (8) |
| Other | 0 (0) | 6 (2) |
| Training | | |
| Personal Care Aide | 38 (6) | 43 (15) |
| Licensed Practical Nurse | 0 (0) | 20 (7) |
| Registered Nurse | 0 (0) | 20 (7) |
| Other | 13 (2) | 3 (1) |
| None of the above | 25 (4) | 3 (1) |
| Combination of above | 25 (4)a | 11 (4)b |

(continued)

| | MPN (n=16) | SCUs (n=35) |
|---|---|---|
| Years experience | | |
| <1 | 25 (4) | 3 (1) |
| 1-5 | 31 (5) | 17 (6) |
| 6-10 | 6 (1) | 20 (7) |
| 10+ | 31 (5) | 57 (20) |
| Missing | 6 (1) | 3 (1) |

[a]All MPN staff who had a combination of training were personal care aids as well as residential aids. Two of these four staff members also indicated they were home support aids, and a third staff member indicated she was a Licensed Practical Nurse. The fourth staff member indicated she was receiving in-service training.

[b]Two of the four SCU staff with a combination of training were both personal care aides and residential aides. The third staff member received training as a personal care aide and a nursing attendant, and the fourth staff member received training as a Licensed Practical Nurse as well as more than one year of training as a Registered Nurse.

Prior to admission to their respective care centres, most residents lived at home. Of the 29 MPN residents, 19 were admitted from their homes, 5 came from TCCG facilities, 4 came from lodges and one came from a group home. Of the 21 SCU residents, 12 came from home, 6 came from TCCG facilities, and 3 were admitted from acute care settings. Not surprisingly, the residents' mean length of stay in the residential care setting ($M$ = 5.76 months, $SD$ = 1.02) was less than that of the SCU residents ($M$ = 16.52 months, $SD$ = 13.09), $t(48) = -4.43$, $p = .00$. Residents in both settings were similar in age, $t(48) = .37$, $p = .71$. The mean age of MPN participants was 81.10 years ($SD$ = 8.20), while the mean

age of the 21 SCU residents was 80.19 (SD = 8.96). The vast majority of residents were female, both at MPN, where 4 out of the 29 residents were male, and at the SCUs, where 7 of the 21 residents were male. Eleven of the residents from MPN were married, 16 were widowed, and 2 were separated or divorced, whereas 10 of the SCU residents were married, 9 were widowed, 1 was separated or divorced, and 1 was never married. Almost all residents spoke English, with the exception of two residents in MPN and a single resident from one of the SCUs.

Resident functional status was assessed using the Functional Assessment Measure (FAM) (Hall, Hamilton, Gordon, & Zasler,1993). Nurses or other primary caregivers provided ratings of residents' functioning in the areas of self-care (minimum possible score = 7, maximum possible score = 49), sphincter control (minimum possible score = 2, maximum possible score = 14), mobility (minimum possible score = 4, maximum possible score = 28), locomotion (minimum possible score = 2, maximum possible score = 14), communication (minimum possible score = 5, maximum possible score = 35), psychosocial adjustment (minimum possible score = 4, maximum possible score = 28), and cognitive function (minimum possible score = 30, maximum possible score = 210). Cognitive status was assessed using the Mini-Mental State Exam (MMSE) (Folstein & Folstein, 1975), in which the lowest possible score is 0 and the highest possible score is 30. Psychosocial functioning was assessed using the Multidimensional Observation Scale for Elderly Subjects (MOSES) (Helmes Csapo, & Short, 1987). Nurses or other primary caregivers rated the level of difficulty residents have in five areas of functioning, including self-care, disorientation, depression/anxiety, irritability, and withdrawl. Each subscale consists of eight items, with a minimum possible subscale score of 8 (indicating a high level of functioning) and a maximum possible score of 32 (indicating a poor level of functioning). These data were collected at time 1 and time 2 for residents of MPN and the SCUs. As Table 2 indicates, participants from MPN had higher FAM scores than the SCU residents, both at time 1, $t(47) = 5.53$, $p = .00$, and time 2, $t(47) = 4.69$, $p = .00$. SCU

residents also had less favourable MMSE and MOSES scores than the MPN participants at time 1, *ts*(47) = 4.64 and -4.19, respectively, and at time 2, *t*(44) = 3.96, *p* = .00, and *t*(47) = -3.86, *p* = .00, respectively.

At time 1, medication and physical restraint data were available for 29 MPN residents, 10 SCU A residents and 11 SCU B residents. Because of participant attrition, time 2 data were not available for seven MPN and one SCU A resident, decreasing the sample size to 22 for MPN and nine for SCU A. The vastly different attrition rates between MPN and the SCUs suggests that an attrition bias may be present, and examination of reasons for drop-out suggests the less healthy MPN residents left between the time 1 and time 2 assessment periods: In MPN, six residents were transferred to facilities that provided higher levels of care, and three of these residents died shortly after being transferred. In addition, one resident died while still living in MPN. The one SCU resident whose time 2 data are not available died while residing in that facility. A series of t-tests were used to test for differences between FAM (Hall et al., 1993), MOSES (Helmes et al., 1987), and MMSE scores (Folstein & Folstein, 1975), as well as the ages of the MPN residents who remained in the study and those who did not. None of the differences were statistically significant, although a pattern emerged such that the MPN residents who dropped out had less favourable scores on the FAM (*M* = 108.17, *SD* =39.55), MOSES (*M* = 76.67, *SD* =19.43) , and MMSE (*M* = 9.33, *SD* =9.42) and were younger (*M* = 78.71, *SD* =7.59) than the MPN residents who were available for the time 2 assessment (*M* = 132.50, *SD* =16.36; *M* = 71.05, *SD* =16.81; *M* = 14.82, *SD* =14.82; *M* = 82.46, *SD* =8.14 for scores on the FAM, MOSES, MMSE, and age, respectively).

Table 2. Means and standard deviations (in brackets) of scores on resident questionnaires.

| | Time 1 | | Time 2 | |
|---|---|---|---|---|
| Questionnaire | MPN (n=28) | SCUs (n=21) | MPN (n=28) | SCUs (n=21) |
| FAM | | | | |
| Self-care | 39.64 (9.95) | 22.29 (10.86) | 37.14 (12.11) | 20.62 (10.36) |
| Sphincter control | 12.11 (3.16) | 7.14 (5.32) | 11.14 (3.42) | 5.91 (4.75) |
| Mobility | 19.18 (2.67) | 13.67 (4.29) | 18.07 (3.68) | 12.67 (4.16) |
| Locomotion | 8.54 (1.20) | 8.81 (0.68) | 8.57 (0.88) | 8.95 (0.22) |
| Communication | 20.57 (5.87) | 13.57 (7.85) | 19.04 (6.88) | 13.24 (7.57) |
| Psychosocial adjustment | 14.46 (4.10) | 10.76 (4.53) | 14.04 (4.72) | 9.95 (4.24) |
| Cognitive function | 12.79 (3.52) | 9.29 (2.31) | 12.36 (3.66) | 9.10 (2.21) |
| Total FAM | 127.29 (24.52) | 85.52 (30.35) | 120.36 (30.47) | 80.43 (28.17) |
| Mini-Mental Status Exam (MMSE) | 13.64 (6.43) | 4.90 (6.66) | 12.52 (7.40)[a] | 4.57 (5.96) |
| Multiobservational Scale for Elderly Subjects (MOSES)* | | | | |
| Self care | 12.18 (3.35) | 19.57 (5.36) | 13.32 (4.51) | 20.62 (4.84) |
| Disorientation | 19.11 (5.39) | 24.86 (4.40) | 19.68 (5.21) | 25.10 (4.81) |
| Depression/anxiety | 14.36 (5.49) | 14.33 (5.42) | 13.50 (5.09) | 13.05 (5.78) |
| Irritability | 10.61 (3.10) | 14.19 (5.65) | 11.46 (4.67) | 13.55 (5.59)[b] |
| Withdrawl | 17.18 (6.07) | 20.95 (5.78) | 16.93 (6.24) | 22.81 (4.93) |
| Total MOSES | 73.43 (17.68) | 93.91 (15.82) | 74.89 (18.82) | 94.48 (15.68) |

(continued)

| | Time 1 | | Time 2 | |
|---|---|---|---|---|
| Questionnaire | MPN (n=28) | SCUs (n=21) | MPN (n=28) | SCUs (n=21) |
| Cornell* | | | | |
| Mood-related signs | 2.86 (2.29) | 2.10 (1.51) | 2.36 (1.95) | 2.20 (2.11) |
| Behavioral disturbance | 0.79 (0.96) | 1.24 (0.89) | 0.61 (0.99) | 0.81 (0.87)[c] |
| Physical signs | 0.18 (0.61) | 0.29 (0.56) | 0.07 (0.38) | 0.19 (0.51) |
| Cyclic functions | 0.04 (0.19) | 1.00 (1.05) | 0.14 (0.45) | 0.48 (0.75) |
| Ideational disturbance | 1.00 (1.64)[d] | 0.10 (0.32)[e] | 0.78 (1.50)[f] | 1.22 (2.17)[g] |
| Total Cornell | 4.82 (4.55) | 4.67 (2.90) | 3.93 (4.25) | 4.19 (3.80) |

[a]n = 25. [b]n = 20. [c]n = 12. [d]n = 27. [e]n = 10. [f]n = 27. [g]n = 9.

*Lower scores indicate better functioning.

Although 66 residents entered the study, not all residents were observed at time 1 and time 2. Three of the residents from MPN were transferred to other centres, one died, and one became wheelchair-bound. A greater proportion of residents in the SCUs than in MPN were not observed at time 2. Three residents were transferred to other centres, one died, and seven became wheelchair-bound. Wheelchair-bound residents were excluded from the study because the spaces they occupied and the kinds of activities they engaged in would be largely dependent on when and where staff moved these individuals.

## Materials

### Staff

Questionnaires included demographic items as well as some qualitative questions. Staff demographic information that was collected includes: age, licensure, years of education, and length of service in continuing care and at the study centre. Staff were asked to respond to six open-ended questions as well, to allow staff to comment on their

experiences. Copies of instruments used to collect information on staff knowledge, attitudes, perceptions of frequency and difficulty in managing resident behaviours and stress are included in Appendix C. Data collected include:

**Knowledge**

The Alzheimer's Disease Knowledge Test (Dieckmann, Zarit, Zarit, & Gatz, 1988) was used to assess staff knowledge of Alzheimer disease. The original test includes 20 multiple choice criterion-referenced items which measure knowledge of prevalence, etiology, diagnosis, symptoms, proposed cures, management of problem behaviours and symptoms, public policy affecting reimbursement, and the role of supportive services. In this study two items (19 and 20) were deleted because of their limited applicability to staff working in Canadian continuing care centres. Item 19 pertains to Medicare and item 20 pertains to the Alzheimer 's Disease and Related Disorders Association. As a result, the lowest and highest possible scores are "0" and "18", respectively. In addition, item 2 was modified by replacing "The prevalence of Alzheimer's disease in the general population of the United States is expected to..." with "The prevalence of Alzheimer disease in the general population of Canada is expected to...". Alpha coefficients for the original 20-item test were used as measures of internal consistency and ranged from .71 to .92. Evidence of the test's construct validity was established by its ability to distinguish levels of knowledge between undergraduate students with no background in gerontology, undergraduate and graduate students in gerontology, and mental health gerontology professionals, all of whom were expected a priori to differ in their levels of expertise.

A review of the gerontological literature revealed no instruments exist for assessing staff knowledge that pertains directly to staff care activities. Consequently, Knight's (1995) staff knowledge tool was used to supplement the Alzheimer's Disease Knowledge Test (Dieckmann et al., 1988). Staff knowledge of the progression of Alzheimer disease, communication techniques, as well as how to assist residents with personal care activities, manage difficult behaviours and support other staff was

assessed using a 15 item true-false questionnaire containing questions for formal caregivers of persons with Alzheimer disease. Each correct answer was worth one point, for a minimum possible score of zero and a maximum possible score of 15.

In addition to the knowledge questionnaires, staff were asked to "Briefly state three points which summarize the staff's day-to-day goals when delivering care to the residents of this long-term care setting," to assess their understanding of the setting's philosophy of care. Also, staff were asked to indicate whether there were any topics related to care for persons with Alzheimer disease in which they would like to have more classroom or hands-on training. The investigator was responsible for developing the data coding schemes for these two questions, as well as the remaining open-ended questions. Data coding proceeded in three phases for each open-ended question. In the first phase, the investigator reviewed all responses and developed a large number of response categories which captured the variety of answers staff provided. In the second phase, the investigator reduced the number of categories by collapsing closely-related response categories. In addition, the investigator assigned code numbers to the respective categories. In the final phase, the investigator reviewed and coded the staff responses using the revised categorization scheme, and ensured all staff responses could be coded using these categories without distorting the intent of the responses.

**Attitudes**

Kogan's Old People Scale (Kogan, 1961) was used to assess staff attitudes toward the aged. The 34-item scale has been used extensively in the gerontological literature. The scale consists of 17 positive and 17 negative statements to which the respondents indicate their level of agreement on a 5-point scale, with "1" indicating "strongly agree" and "4" indicating "strongly disagree". Kogan (1961) reports odd-even reliabilities ranging from .66 to .83. Content validity of this scale is demonstrated by its significant correlations with attitudes toward ethnic minorities and physically disabled groups. In addition, Old People Scale scores have been found to be positively correlated

with a disposition to associate with the aged (Ivester & King, 1977). Scores on the negatively-worded items were made comparable to scores on the positively-worded items by subtracting six from each score on the negatively-worded items. For both scales, scores on each of the 17 items were added together, for minimum possible scores of 17 (indicating more favourable attitudes toward older adults) and maximum possible scores of 85 (indicating less favourable attitudes toward older adults).

In addition, the Attitude Toward Dementia Patients Scale (Sandman, Adolfsson, Norberg, Nystrom, & Winblad, 1988) was used to assess staff attitudes toward caring for older adults with dementia. The original scale consisted of 30 items, but 10 items were removed after Åström, Waxman, Nilsson, Norberg, and Winblad (1991) discovered that these items loaded weakly in factor analysis. Respondents are asked to state their attitudes on a 5-point scale, with "1" indicating "agree completely" and "5" indicating "disagree completely". The most positive attitude is indicated by a total score of 20, while the most negative attitude is indicated by a score of 100.

**Perceptions of Frequency and Difficulty in Managing Resident Behaviours and Stress**

The Caregiver Stress Inventory (Maas, 1988) was used to assess staff perceptions of stress associated with caring for residents. This 43-item, self-report instrument is designed for staff caring for Alzheimer disease residents and consists of three subscales measuring staff stress related to resident verbal, physical, emotional, or social behaviours (patient behaviours), staff knowledge, abilities and resources (resources/knowledge), and inadequate physical care for residents (physical care). Using a 7-point Likert scale, staff rate items based on the extent to which they reflect sources of stress, with "1" indicating very little stress" and "7" indicating "very much stress". The patient behaviours subscale consists of 27 items, for a minimum possible score of 27 and a maximum possible score of 189. The resources subscale consists of 12 items. Thus, a score of 12 reflects the minimum level of stress possible, while a score of 84 indicates a

maximum level of stress for this subscale. The physical care subscale is made up of four items, with a minimum possible score of 4 and a maximum of 28. Chronbach's alpha for the entire set of items, the patients' behaviours subscale, the resources/knowledge subscale and the physical care subscale are .96, .94, .86, and .62, respectively. For this study, some items were modified slightly. For example, in their original format, several items are worded as "Some residents..." while other items are worded as "When residents...". To enhance interpretability, these items were reworded simply as, "Residents...".

Maslach's Burnout Inventory (Maslach & Jackson, 1981) was used to assess staff stress. Maslach's Burnout Inventory is a 22-item self-report questionnaire developed to measure three aspects of burnout, namely emotional exhaustion, depersonalization, and personal accomplishment. Item responses are based on a 7-point scale and the questionnaire takes 10-15 minutes to complete. Burnout is reflected in relatively high scores on the emotional exhaustion and depersonalization subscales, along with relatively low scores on the personal accomplishment subscale. This instrument has been used in related studies (Chappell & Novak, 1992; Hare, Pratt, & Andrews, 1988; Mobily, Maas, Buckwalter, & Skemp Kelley, 1992). Subscale reliability coefficients using Chronbach's coefficient alpha are .90, .79 and .71 for emotional exhaustion, depersonalization and personal accomplishment, respectively (Maslach & Jackson, 1981). Discriminant validity has been demonstrated in a number of ways, including low correlations of the subscales with measures of job satisfaction for rehabilitation workers and mental health workers.

Two open-ended questions were included at the end of the questionnaire package to assess sources of stress for staff. In one question, staff were asked to list the obstacles that made it difficult for them to carry out their goals on a day-to-day basis. The other question asked staff to list aspects of their job they do not like. Staff responses to these questions (as well as the open-ended question regarding what they like about their

jobs) were categorized using a classification scheme outlined by Cohen-Mansfield (1989). In her study of sources of satisfaction and stress in nursing home caregivers, Cohen-Mansfield (1989) categorized staff responses according to institutional, unit, patient and personal factors. In the present investigation, institutional factors are referred to instead as organizational factors because of the previous use of the term "institutional" in the context of describing the overall milieu of a care setting (i.e., institutional vs. residential). In addition, unit factors are referred to as care setting factors because MPN is not a nursing unit.

Staff turnover and absenteeism were used as indicators of staff stress, as well. Turnover was assessed by recording the proportion of staff members originally included in the study who were still employed by the facilities after one year. To measure absenteeism, the number of paid and unpaid incidental sick days taken by each staff member, as well as the number of days each staff member was scheduled to work, was obtained from the personnel records at each study site.

### Satisfaction

Sources of satisfaction for staff were assessed by one open-ended question in which staff were asked to identify what aspects of their jobs they like.

## Residents

Along with assessing staff knowledge, attitudes, perceptions and stress, one of the goals of the study was to assess how these staff attributes translate into daily care activities. To achieve this goal, data regarding medication and physical restraint use was recorded, along with the daily activities of residents. The following section outlines the specific data that were collected:

### Medications and Physical Restraints

The Capital Care Group monitored the use of medications and physical restraints in the residential care facility and in the SCUs. During the two data collection time points, the pharmacy department at each site documented the residents' prescribed daily usage

of antipsychotic, anxiolytic, sedative and hypnotic medications for a period of two weeks. Medications were collapsed into the following categories: desyrel, trazadone, paxil, aventyl, prozac, sinequan, ludiomil, desipramine, and anafranil were categorized as antidepressants; buspar, serax, ativan, and chloral hydrate, rivotril, and xanax were categorized as anxiolytics; loxapine, mellaril, haldol, and risperdal were categorized as neuroleptics. Medication use for each type of drug is expressed as milligrams per resident per 24 hours. Medication prescribed on a PRN (pro re nata) basis was documented separately and reported as milligrams per resident per 24 hours. Data regarding physical restraint use was collected at all sites included in the study for a period of two weeks during the two data collection time points. Information recorded includes: i) the total number times residents on each unit were restrained, ii) the total number of times residents were restrained for purposes of rest, keeping in bed, toileting, eating, and other reasons, and iii) the types of restraints used.

**Activities**

One of the goals of this study was to assess how staff knowledge, attitudes, perceptions and stress translate into daily care activities and interactions with residents. That is, the investigator wanted to assess whether differences in staff attributes between the two types of care settings resulted in differences in the kinds of activities residents were engaged in and with whom they engaged in these activities. To provide a systematic description of resident behaviours, observers directly observed and recorded the residents' location and activities at MPN and the two SCUs. To accomplish this goal, scan samples of residents were conducted using an instantaneous sampling technique (Lehner, 1996). At predetermined times, observations were made by sequentially scanning and recording the location and behaviour of each resident as quickly as possible. This method of observation is akin to taking a "snap shot" of each resident's behaviour at predetermined points in time.

Observers used a behavioural checklist to record the location and behaviours of

residents in each facility. The investigator created this behavioural checklist in conjunction with an ethogram. An ethogram contains categories of information a researcher wishes to record while observing participants. The categories he/she selects and how the items within the categories are defined in the ethogram are determined by the goals of the study. The ethogram for this study consists of five major categories, including location, activity engaged in, activity with whom, communication, and communication with whom. These major categories are shown in Appendix D. One of the goals of this study was to determine whether the kinds of activities MPN residents engaged in differed from the kinds of activities SCU residents engaged in, and whether the types of activities residents of these care settings engaged in changed over time. To accomplish this goal, the investigator designed the checklist to assist the observers in recording where residents were located, whether they engaged in some type of activity and, if so, what kind and with whom, and whether they were communicating and, if so, with whom. Each of the five major categories contained an "other" item for locations and behaviours not identified by the items listed within these major categories, as well as an "unobservable" item for instances in which the researchers were unable to observe a resident. As is the case for the rest of the items, the mean proportions of scans in which the researchers selected "unobservable" was calculated. The list of items within the activity, activity with whom and communication with whom categories were not mutually exclusive. Thus, more than one item within these categories was selected when residents engaged in more than one activity or engaged in an activity or communicated with more than one type of person.

The "location" category includes an exhaustive list of functional areas within MPN and the two SCUs. In MPN and SCU A, this category includes the secured outdoor spaces in which residents had access (SCU B residents did not have outdoor access). The functional areas were derived from casual observation of resident, staff and visitor use of space, and from consultation with the facilities' administration and staff.

The "activity" category was designed to capture whether residents were awake

and engaged in activities and, if so, what types of activities they were engaged in. With one exception, items included within the activity category were generated after informally observing residents at MPN and the SCUs. Items included in the list were null (sleeping or not attending to the environment), activities of daily living (A.D.L.s), work activities/daily chores, leisure activities, socially inappropriate behaviours, walking, and people-watching/looking out the window. The "work activities/daily chores" activity item was added after consulting with staff members at MPN, who noted that many of the residents assisted them with daily activities, such as setting tables, sweeping floors and making beds. This item is of particular interest because staff in residential care facilities purportedly encourage residents to participate in daily chores as one way of making the facility more "homelike" (Beck-Friis, 1988; Malmberg & Zarit, 1993).

In the "communication" category, observers simply recorded whether residents were communicating with others. Thus, items within this category included communication and no communication. Communication is defined broadly to include not only instances in which residents were engaged in conversation, but more subtle forms of communication as well, such as holding someone else's hand.

The "activity with whom" and "communication with whom" categories were designed to capture whom the residents were in contact with when they were observed. Both categories include items to record the presence of other residents, staff, visitors, and others, such as volunteers. The staff item is of particular interest in this study because one of the goals of the residential model of care is to increase resident-staff interaction.

In addition to recording the location and behaviour of residents, observers noted the presence of any environmental or situational factors which could have affected residents' behaviours. For instance, if a resident was restrained during his/her scheduled observation period, the investigators wrote a comment on the sheet in which his/her location and behaviour were being recorded.

Observations were recorded using pencil and paper. Each time the investigator

observed a resident she recorded the date and time, along with the name of the observer recording the behaviour, the facility in which the observation took place and the resident's name. Each data sheet consisted of three columns. The first column was an itemized list of possible locations for that particular facility, whereas the second column contained a list of possible activities (including communication) the resident could engage in, and the third column contained a list of the types of people with whom the resident could engage in these activities. The observer denoted the resident's location and activity by placing a check-mark in the spaces corresponding to the resident's observed location and activity. Similarly, the observer indicated with whom the resident engaged in the activity(ies) by circling the appropriate "with whom" item(s).

## Design and Procedure

### Independent Variables

The independent variable in the first objective is time (time 1 vs. time 2), and the independent variable for the second objective is type of care setting (MPN vs. SCU). A description of the programs, physical environments, staffing and staff training, as well as admission and discharge criteria for each facility is outlined in Appendix E. In particular, MPN is distinguished by the fact that staff are hired on the basis of interest in working with residents with Alzheimer disease and contiguity with the program's philosophy, with minimal emphasis on prior work history. The staff participated in a specially designed 6-day orientation program, as outlined in Appendix F. In addition, education and training sessions continued periodically throughout the duration of the study.

### Staff Questionnaire Pilot Testing

Questionnaires used to assess staff knowledge of Alzheimer disease, attitudes, perceptions of frequency and difficulty in managing resident behaviours, and stress were pilot-tested on staff working on the Mentally Dysfunctional Elderly (M.D.E.) unit located within the same facility as one of the SCUs included in the study. In this unit, staff care for elderly residents who were transferred from other locations because of severe

behavioural problems. Five nursing staff from this unit were asked to complete the questionnaires on January 8 and January 22, 1996. The purpose of the pilot-testing was to assess the test-retest reliabilities of the instruments for which there is no or very little reported psychometric information, as well as to determine if there were any items which were unclear or ambiguous. Staff comments on specific items were recorded immediately after the questionnaires were completed a second time.

## Observer Training and Inter-Observer Reliability

Several weeks of training were required for the observers to learn how to record resident behaviours using the behavioural checklist. After the investigator developed the ethogram, two observers (including the investigator) memorized the categories and definitions. In the next phase, the observers walked through each facility to familiarize themselves with the locations specified in the location category of the behavioural checklist and accompanying maps. In addition, they observed residents' behaviour informally and practiced using the checklist. During this phase, the principal investigator modified the ethogram and clarified definitions when discrepancies between the other observers in the interpretation of the definitions became apparent. Finally, observers practiced intensively in each facility the week prior to formal observations to ensure inter-observer reliability would remain high when data collection began. During the data collection phase, the two observers recorded the residents' locations and behaviours simultaneously, but independently, in two of the nine daily observation sessions so that reliabilities of their observations could be assessed. In all facilities, the daily reliability sessions occurred at different times for each day of the week.

## General Procedures

Prior to the study, a project co-ordinator employed by TCCG obtained consent from family members of the MPN and SCU Alzheimer residents after outlining the purpose of the study and how their relatives would be involved. The investigator obtained consent from staff after making a series of 20 minute presentations to MPN and SCU staff

regarding the goals of the study and the issues associated with participation. Staff knowledge of Alzheimer disease, attitudes, perceptions of frequency and difficulty in managing resident behaviours, and stress at MPN were tested approximately six (time 1) and 12 months (time 2) after the centre was fully occupied. These intervals were chosen in order to assess differences in these attributes, perceptions and behaviours over time without taxing the staff as a result of frequent testing. In the SCUs, staff knowledge of Alzheimer disease, attitudes, perceptions of frequency and difficulty in managing resident behaviours, and stress were assessed at the 6- and 12-month points that the staff from MPN were assessed. Time 1 assessments of all staff took place between mid-February and early March, 1996, and time 2 assessments were made between the last week of August and mid-September, 1996. Staff turnover and absenteeism data were collected at time 2 for all facilities. Resident activity data were collected via behavioural observations at time 1 and time 2 at MPN and both SCUs. Time 1 behavioural observations took place throughout May, 1996, and time 2 observations occurred throughout November and the first week of December, 1996.

**Staff Questionnaires**

The investigator was responsible for administering the self-report questionnaires to staff groups. Staff were given release time to complete these questionnaires. MPN and SCU A staff completed the questionnaires in a room within their respective facilities during two 30-minute sessions. The investigator administered the questionnaires over two sessions rather than within one 1-hour session because it was virtually impossible to release staff from their duties for an extended period of time. Conversely, SCU B staff completed the questionnaires over a single 60-minute session. In all three settings, staff were permitted to attend an additional session to complete the questionnaires if they were unable to do so within the allocated one hour. The investigator was present while the questionnaires were being completed to provide assistance if necessary and to prevent staff members from discussing their responses with each other.

**Behavioural Observations**

Observations in each facility took place six months after MPN opened, and again after 12 months. On both occasions, observations occurred over five days. As indicated in Appendix G, observation sessions began at 9:00 a.m.. The schedule of observations was arranged such that within each scan session, the behaviour of each resident was recorded once per hour, beginning on the hour, between 9:00 a.m. and 7:00 p.m., excluding the mealtime hours of 12:00 p.m. and 5:00 p.m.. At each site, observations on each of the weekdays took place within a two-week window. Thus, each resident was scheduled to be observed nine times per day for five days, for a total of 45 times at time 1 and again at time 2. The hourly scans typically took 20 minutes to complete at MPN, while the hourly scans conducted at SCUs A and B typically took 10 minutes to complete. Differences between the care settings in the time it took to complete the scans were primarily a result of differences in the square footage of each site. Because MPN is much larger than either of the two SCUs, it took longer for the observers to locate a resident when he/she was not in his/her own house because there was more space to search.

Behaviours were recorded using pencil and paper. Residents were observed in the same order over the course of a particular day, but the order changed between days to prevent any order biases occurring in observations of residents' behaviours. Because of the large number of residents included in each scan, observations of residents were grouped according to "houses" (in MPN) or "units/wings" (in the SCUs) to ensure that each scan was completed before the next one was scheduled to begin. The order in which each house or unit/wing was observed on a particular day was determined using a random numbers table. A random numbers table was used, as well, to determine the order in which residents within each house or wing were observed.

Two people were trained for observations. Of the nine daily observation scan sessions, five were conducted solely by the principal investigator, one was conducted

solely by the second trained observer, and two were conducted by both observers to assess reliability.

# CHAPTER 3: RESULTS

## Reliabilities

### Staff Questionnaires

After staff from the M.D.E. unit completed the pilot study, test-retest reliabilities of those staff questionnaires with little or no reported psychometric information were examined. Overall, reliabilities were satisfactory. Pearson's correlation coefficients were .91 (n=4) for Knight's (1995) True-False Test of knowledge of Alzheimer disease, and .77 (n=5) for the Attitude Toward Dementia Patients Scale (Sandman et al., 1988).

### Behavioural Observations

Reliabilities between observers were calculated using Cohen's (1960) Kappa, a measure of agreement which takes into account agreement between observers due to chance alone. Kappas were calculated for location, activity, activity with whom, communication and communication with whom, and each reliability session generated one kappa value for each of these categories. Two reliability sessions were conducted on each of the five days that behavioural observations were made in each facility, for a total of 10 reliability sessions in each facility at time 1 as well as time 2. To illustrate, in Table 3, the kappa reported for the activity category at MPN at time 1 (.88) is based on the average of the 10 activity category kappas calculated from the 10 reliability sessions conducted at MPN at time 1.

As indicated in Table 3, the overall kappas and kappas within each site are high, both at time 1 and time 2. Of the 300 kappas that were calculated (10 sessions/facility X 3 facilities X 5 categories X 2 data collection periods), 17 are not reported because the percent of chance agreement was 100. This outcome occurs when there is little variation in items selected from a category, resulting in high agreement between observers simply by chance. For instance, in one scan session none of the residents were observed

communicating. Consequently, both observers selected "no communication" for each resident's communication behaviour during that observation session. Because each observer selected "no communication" 100% of the time, their agreement is 100% simply due to chance.

Table 3. Mean Kappa reliabilities at time 1 and time 2 for location, activity, activity with whom, communication and communication with whom categories.

| | Care Setting | | | |
|---|---|---|---|---|
| | MPN | SCU A | SCU B | Overall |
| Time 1 | | | | |
| Location | .96 | .93 | .98 | .95 |
| Activity | .88 | .91 | .98 | .92 |
| Activity with whom | .82 | .84 | .98 | .88 |
| Communication | .90 | 1.00 | .96 | .95 |
| Communication with whom | .88 | 1.00 | .95 | .94 |
| Time 2 | | | | |
| Location | .97 | .94 | .96 | .96 |
| Activity | .89 | .95 | .98 | .94 |
| Activity with whom | .89 | .92 | .90 | .90 |
| Communication | .89 | .97 | .94 | .93 |
| Communication with whom | .87 | .97 | .92 | .91 |

## Statistical Analyses

### Staff Questionnaires

Multiple Analysis of Variance (MANOVA) was the primary statistical tool used to examine the research questions for the staff questionnaire data. Staff completed six questionnaires. The Maslach Burnout Inventory (Maslach & Jackson, 1981) and the Caregiver Stress Inventory (Maas, 1981) contain three subscales, whereas Kogan's (1961) Old People Scale contains two subscale scores. The remaining three questionnaires each produce a single total score. Thus, in total there are 11 dependent variables. Stevens (1996) recommends computing separate MANOVAs for subgroups of dependent variables when the MANOVA technique is used to examine differences among a large number of dependent variables, and when no strong rationale exists for analyzing them in a single analysis. The purpose of running separate MANOVAs is to minimize the risk that negligible differences among some of the dependent variables will obscure real differences in other dependent variables, resulting in an overall F that is not statistically significant. Therefore, the dependent variables were divided into three groups, and three MANOVAs were computed. The first group of dependent variables includes scores on the Alzheimer Disease Knowledge Test (Dieckmann et al., 1988) the True-False Test (Knight, 1995), Kogan's (1961) Old People Scale and the Attitude Toward Dementia Patients Scale (Sandman et al., 1988), whereas the second group of dependent variables is comprised of subscale scores from the Caregiver Stress Inventory (Maas, 1988), namely patient behaviours, resources/knowledge, and physical care. The third group of dependent variables includes the emotional exhaustion, personal accomplishment and depersonalization subscale scores from the Maslach Burnout Inventory (Maslach & Jackson, 1981). In all cases, data were analyzed using repeated-measures multivariate analysis of variance (MANOVA) procedures, with time (time 1 vs. time 2) as the within-subjects factor and care setting (MPN vs. SCUs) as the between-subjects factor. Multivariate statistics were tested against an alpha of .05 and univariate tests were

compared to alpha levels that were adjusted using the Bonferonni correction.

Prior to statistical analyses, the data were examined to ensure that assumptions underlying the MANOVA were met. Exploratory analyses of the data revealed severe violations in one of the Maslach Burnout Inventory (Maslach & Jackson, 1981) subscales (personal accomplishment), which could not be corrected, even by transforming the data. Consequently, this subscale was excluded from further inferential analyses. In addition, differences between SCU A and SCU B staff questionnaire data were examined to determine whether the SCU staff data could be pooled. For both the time 1 and time 2 data, three MANOVAs were computed with SCU (A vs. B) as the independent variable in each case and the same three sets of questionnaires outlined previously as the dependent variables. The analyses revealed no significant multivariate effects, permitting the investigator to consider SCU staff responses as a single group.

No statistical analyses of the staff responses to the open-ended questions were conducted because of the small sample sizes. The investigator categorized staff responses, and the frequencies of these categories are presented. Although the investigator attempted to identify general trends in staff responses, the reader should be aware that the small frequencies seriously limit any conclusions that can be drawn from these findings.

## Staff Absenteeism and Turnover

Staff absenteeism was measured as the percent of paid sick days plus the percent of unpaid sick days each staff member accrued. The percent of sick days was calculated as the total number of hours a staff member was paid for sick leave, divided by the total number of hours he/she worked; the percent of unpaid sick days was calculated as the total number of hours a staff member was not paid for sick leave, divided by the total number of hours he/she worked.

To test for differences in staff absenteeism over time (as well as among sites), a repeated measures MANOVA procedure was used. The dependent variable was the

total percent paid sick days. The independent variables included time (time 1 vs. time 2) as the within-subjects factor, and care facility (MPN vs. SCU A vs. SCU B) as the between-subjects factor.

Prior to analysis, the data were examined to determine whether the underlying assumptions of the MANOVA procedure were met. Exploratory analyses of the MPN data revealed the presence of three outliers, which were identified by creating boxplots of the absenteeism data at time 1 and time 2. Data points beyond three times the inter-quartile range were removed, including the removal of data from two MPN staff members and one SCU B staff member. In addition, the data were positively skewed for time 1 and time 2 data. The investigator performed a square root transformation of the data, as recommended by Stevens (1996), and then used the repeated measures MANOVA procedure to test for differences over time as well as among the three centres. Data for the SCUs were not collapsed because doing so produced a platykurtic distribution that no transformation could correct.

Within each centre, staff turnover was measured as the number of staff present at time 1 who were no longer working in their respective care sites during the time 2 data collection period, divided by the total number of staff working within the sites at time 1. This measure includes only those staff members who participated in the study at time 1. Staff members were considered absent at time 2 if they quit, retired or were participating in occupational or physical rehabilitation through the Workers Compensation Board, bumped or on a leave of absence. Conversely, staff were counted as present at time 2 if they remained employees of the same care setting as in time 1, even if they were on maternity leave or promoted.

## Medication and Physical Restraint Use

Much of the information collected regarding medication and restraint use produced categorical and frequency data. In other portions of the data set, sample sizes are small (i.e., less than 20). Thus, primarily non-parametric tests were used to examine differences

between time 1 and time 2 as well as differences between MPN and the SCUs in resident use of medications and physical restraints.

Chi-square tests were used to examine differences between MPN and the SCUs in the proportion of residents taking medications; McNemar's test for correlated samples was used to examine differences between time 1 and time 2 in the proportion of residents taking medications. Because of the small numbers of residents taking medications, non-parametric tests also were used to examine differences in the mean numbers. Specifically, the Mann-Whitney U test was used to examine differences in the average number of medications taken between MPN and the SCUs, whereas differences between time 1 and time 2 were examined using Wilcoxin's test for paired samples.

No statistical tests are reported for the findings pertaining to reasons for restraints or types of restraints used. Although a chi-square is an appropriate choice of test, too few cells contain the minimum expected frequency required for $x^2$ tests of significance (Delucchi, 1993). Finally, because so few residents were reported using either PRNs ("as needed" medications) or combinations of medications, no statistical tests were performed on this portion of the data.

## Resident Behaviours

At time 1, two sets of married couples resided in MPN. Data produced by observations of these married residents were examined separately from those of other MPN residents because the behaviours of each member of the couple appeared highly dependent on those of his/her partner. In addition, during the behavioural observation training sessions, the investigator noted that the behaviours of the married couples were very different from the behaviours of the residents not living with their spouses.

Between the time 1 and time 2 data collection periods, one of the spouses of one of the couples (couple 1) died. However, the widowed spouse befriended another resident shortly thereafter. They spent time together in each others' rooms, and were considered a "couple" by the staff and family. Therefore, these two residents also are

treated as a couple in the presentation of the time 2 data, and are identified as "couple 1". Given that the couples sample size is very small (n=4), no definitive statements can be made about the behaviours of couples living in residential care environments in general. Nevertheless, the data are useful for descriptive purposes because, to the investigator's knowledge, no data exist on the behaviours of married residents living within this type of dementia care centre. Therefore, findings from observations of these residents are included in this study and are presented in Appendix H.

For each resident, data were collapsed across all scans collected at time 1. Then, the proportions of scans in which each resident was recorded in each possible location, and engaged in each type of behaviour and communication, were tabulated. Identical procedures were used to examine the time 2 data. Proportions were calculated for items within the location and activity categories by dividing the total number of times each item was selected for a resident by the total number of times that resident was observed. The denominator was calculated by subtracting the total number of instances of missing data for that resident from 45 (the total number of scans conducted for each resident during each of the two data collection periods). When proportions were calculated for data collapsed over the time 1 and time 2 data collection periods, the denominator was calculated by subtracting the total number of instances of missing data from 90.

The activity data were analyzed using repeated-measures multivariate analysis of variance (MANOVA) procedures, with time (time 1 vs. time 2) as the within-subjects factor and care setting (MPN vs. SCUs) as the between-subjects factor. Similar to the analysis of the questionnaire data, the dependent variables were separated into groups to maximize power.

Data on the presence of others were analyzed using both parametric and non-parametric statistics. Several assumptions underlying the repeated-measures MANOVA were violated, and no data transformation was successful in altering the data so that the assumptions could be met. Thus, non-parametric statistics were computed, and it is these

results that are reported. The major disadvantage of using non-parametric tests is that they do not permit the investigator to examine interactions between variables (Portney & Watkins, 1993), although it is noteworthy that parametric statistical testing revealed no significant interaction effects. In fact, the parametric and non-parametric statistical analyses revealed similar findings. Differences between MPN and SCU residents in the proportion of scans they were observed with other residents, staff and visitors were examined using the Mann-Whitney U test. Tests were conducted for time 1 and time 2 data, for a total of six tests. In addition, differences between time 1 and time 2 in with whom residents were observed were examined using the Wilcoxin matched-pairs signed-ranks test. Separate tests were computed for the proportions of scans MPN and SCU residents were observed with other residents, staff and visitors, for a total of six tests. To control for the probability of committing a Type I error, the criterion for rejecting the null hypothesis was alpha set at .005 (.05/10). Using this alpha level, the probability of committing a Type I error overall is only slightly higher (.06) than the conventional standard of .05, and power is not unduly diminished.

## A Final Comment About Data Analysis

A fundamental statistical and methodological issue inherent in this study concerns the appropriateness of collapsing data from the two SCUs as a means of increasing statistical power. It is widely recognized in the literature that SCUs vary tremendously in terms of their staffing, residents, philosophy and physical settings (Lindeman & Montgomery, 1994; Phillips, 1996; Sloane, Lindeman, Phillips, Moritz, & Koch, 1995). In the present study, for instance, comparisons between residents of SCU A and SCU B reveal a trend toward higher functional performance scores for SCU B residents compared to their SCU A counterparts. At time 1, SCU B residents scored more favourably on the FAM ($\underline{M}$ = 90.00, $\underline{SD}$ = 28.18), MMSE ($\underline{M}$ = 6.18, $\underline{SD}$ = 7.01 ), and MOSES ($\underline{M}$ = 94.09, $\underline{SD}$ =13.86) than SCU B residents ($\underline{M}$ = 84.11, $\underline{SD}$ = 33.37; $\underline{M}$ = 3.67, $\underline{SD}$ = 6.67; $\underline{M}$= 92.67, $\underline{SD}$ = 13.86, for the FAM, MMSE, and MOSES, respectively). Similar trends

occurred at time 2, as well. SCU B residents scored more favourably than SCU A residents on the FAM (M = 85.00, SD = 27.57 vs. M = 78.00, SD = 29.83), MMSE (M = 6.73, SD = 6.41 vs. M = 3.33, SD = 5.81 ), and MOSES (M = 93.64, SD =19.09 vs. M = 94.78, SD =12.36). Although none of the differences were statistically significant, they suggest the two SCUs may differ in important ways. Such differences not only limit the generalizability of findings from one SCU to another, but also suggest analyses based on data that have been collapsed across sites should be interpreted with caution.

Nevertheless, data from SCUs A and B were combined when testing for differences between MPN and the SCUs. Collapsing the SCU data was instrumental in maximizing the power of the MANOVAs. In addition, in instances in which chi-square tests were used (e.g., the turnover data), not enough cells would have contained the minimum expected frequency required for $x^2$ tests of significance if the SCU data had not been combined. Moreover, little would be gained by examining the data separately given that only two SCU sites were included in this study. That is, regardless of whether the SCU data are examined separately or are collapsed, it would be inappropriate to generalize the findings of this study to other SCUs.

## Knowledge

### Differences Between Time 1 and Time 2

To examine the hypothesis that staff knowledge would be higher at time 1 than at time 2, scores on the Alzheimer Disease Knowledge Test (Dieckmann et al., 1988) and the True-False Test (Knight, 1995) were compared at time 1 and 2. Means and standard deviations for MPN staff responses at time 1 and time 2 are presented in the left hand portion of Table 4. No statistically significant differences were found, as indicated by the non-significant time, F(5,42) = 1.98, p = .10, and Care Setting X Time effects, F(5,42) = 0.46, p = .81.

Table 4. Means and standard deviations for questionnaires completed by MPN and SCU staff

| | MPN | | | | SCUs | | | |
|---|---|---|---|---|---|---|---|---|
| | Time 1 | | Time 2 | | Time 2 | | Time 2 | |
| | M | SD | M | SD | M | SD | M | SD |
| Questionnaire | | | | | | | | |
| Alzheimer Disease | | | | | | | | |
| Knowledge Test | 12.31 | 2.39 | 12.00 | 2.16 | 11.14 | 2.72 | 11.00 | 3.20 |
| True-False Test | 12.13 | 1.45 | 12.56 | 1.21 | 12.00 | 2.06 | 12.35 | 1.79 |
| Kogan's Old People | | | | | | | | |
| Scale | 71.88 | 12.08 | 68.56 | 13.36 | 76.57 | 14.42 | 74.00 | 15.97 |
| Positive scale | 2.19 | 0.39 | 2.09 | 0.38 | 2.32 | 0.38 | 2.27 | 0.48 |
| Negative scale | 2.03 | 0.40 | 1.95 | 0.48 | 2.19 | 0.54 | 2.08 | 0.54 |
| Attitudes Toward | | | | | | | | |
| Dementia Patients | | | | | | | | |
| Scale* | 61.32 | 6.70 | 62.25 | 5.71 | 62.00 | 5.12 | 61.37 | 6.80 |
| Caregiver Stress | | | | | | | | |
| Inventory* | | | | | | | | |
| Patient behaviours | 58.13 | 18.99 | 63.25 | 19.89 | 73.76 | 24.64 | 84.8 | 28.43 |
| Resources/ | | | | | | | | |
| knowledge | 28.88 | 11.35 | 27.38 | 12.34 | 36.45 | 12.22 | 37.56 | 12.19 |
| Physical care | 11.31 | 3.03 | 11.94 | 4.80 | 15.09 | 5.26 | 15.68 | 4.71 |

(continued)

| | MPN | | | | SCUs | | | |
|---|---|---|---|---|---|---|---|---|
| | Time 1 | | Time 2 | | Time 2 | | Time 2 | |
| | M | SD | M | SD | M | SD | M | SD |
| Maslach Burnout Inventory | | | | | | | | |
| Emotional exhaustion* | 7.56 | 5.77 | 11.43 | 7.34 | 14.79 | 8.98 | 16.74 | 10.07 |
| Personal accomplishment | 44.31 | 2.58 | 43.38 | 3.74 | 37.83 | 7.75 | 34.97 | 10.01 |
| Depersonalization* | 1.13 | 1.59 | 2.50 | 3.37 | 1.73 | 2.47 | 1.91 | 2.99 |

Note. Means and standard deviations are based on the number of staff who completed that particular questionnaire, regardless of whether their scores are available for other questionnaires. *Lower scores indicate more favourable response than higher scores.

In addition, the staff's understanding of the setting's philosophy of care was assessed by asking staff to, "Briefly state three points which summarize the staff's day-to-day goals when delivering care to the residents of this long-term care setting." As outlined in Table 5, nearly half of the MPN respondents stated making sure residents feel happy and/or comfortable and maximizing residents' independence were part of their day-to-day goals. In addition, more than one quarter of the staff suggested providing a clean and/or safe environment was one of the centre's goals. At time 2, making sure residents feel happy and/or comfortable was again one of the most frequently-given responses. Similar to the responses provided at time 1, maximizing resident independence and providing a clean and/or safe environment were the more frequently-stated goals at time 2. On the other hand, three times as many staff at time 2 as at time 1 stated that providing residents with activities and stimulation was one of the day-to-day goals.

Table 5. Percent and frequency (in brackets) of staff responses to, "Briefly state three points which summarize the staff's day-to-day goals when delivering care to the residents of this long-term care setting."

| | MPN (n=16) | | SCUs (n=35) | |
|---|---|---|---|---|
| Response | Time 1 | Time 2 | Time 1 | Time 2 |
| No response. | 0 (0) | 0 (0) | 14 (5) | 17 (6) |
| Provide basic needs (e.g., feeding, toileting, cleaning). | 19 (3) | 19 (3) | 49 (17) | 51 (18) |
| Provide clean and/or safe environment. | 31 (5) | 25 (4) | 23 (8) | 31 (11) |
| Make sure residents feel happy and/or comfortable. | 44 (7) | 38 (6) | 23 (8) | 26 (9) |
| Maximize independence. | 44 (7) | 25 (4) | 14 (5) | 6 (2) |
| Provide love, compassion, and/or understanding. | 26 (4) | 19 (3) | 17 (6) | 20 (7) |
| Provide activities/stimulation. | 13 (2) | 38 (6) | 14 (5) | 17 (6) |
| Provide best possible quality of care. | 25 (4) | 13 (2) | 11 (4) | 14 (5) |
| Provide home-like atmosphere. | 25 (4) | 13 (2) | 3 (1) | 0 (0) |
| Treat residents with dignity and respect. | 13 (2) | 6 (1) | 14 (5) | 0 (0) |
| Provide for emotional/spiritual needs. | 0 (0) | 13 (2) | 11 (4) | 6 (2) |
| Maximize residents' quality of life. | 1 (1) | 1 (1) | 9 (3) | 9 (3) |
| Spend time with/enjoy residents. | 0 (0) | 19 (3) | 3 (1) | 9 (3) |
| Create a calm, pleasant atmosphere. | 1 (1) | 0 (0) | 6 (2) | 9 (3) |

(continued)

| Response | MPN (n=16) | | SCUs (n=35) | |
|---|---|---|---|---|
| | Time 1 | Time 2 | Time 1 | Time 2 |
| Minimize aggression. | 0 (0) | 0 (0) | 6 (2) | 9 (3) |
| Ensure families are happy with care; support family. | 0 (0) | 0 (0) | 3 (1) | 9 (3) |
| Ensure residents well-groomed. | 0 (0) | 0 (0) | 6 (2) | 9 (3) |
| Acknowledge/address resident needs. | 0 (0) | 13 (2) | 3 (1) | 0 (0) |
| Help residents make choices. | 0 (0) | 13 (1) | 0 (0) | 0 (0) |
| Allow residents to assist staff, feel useful. | 13 (2) | 1 (1) | 0 (0) | 0 (0) |
| Compensate for lost skills. | 1 (1) | 0 (0) | 3 (1) | 0 (0) |
| Work as a team. | 1 (1) | 1 (1) | 3 (1) | 0 (0) |
| Provide an enjoyable meal environment. | 0 (0) | 0 (0) | 3 (1) | 0 (0) |
| Incorporate all forms of treatment within reach. | 0 (0) | 0 (0) | 3 (1) | 0 (0) |
| Make each day a new one. | 0 (0) | 0 (0) | 3 (1) | 0 (0) |
| Complete all tasks with limited number of staff. | 0 (0) | 0 (0) | 0 (0) | 3 (1) |
| Keep staff and management happy. | 0 (0) | 0 (0) | 0 (0) | 3 (1) |
| Have positive attitude, sense of humor. | 0 (0) | 0 (0) | 0 (0) | 3 (1) |
| Provide residents with quiet time. | 0 (0) | 0 (0) | 0 (0) | 3 (1) |

(continued)

| | MPN (n=16) | | SCUs (n=35) | |
|---|---|---|---|---|
| Response | Time 1 | Time 2 | Time 1 | Time 2 |
| Control behavior and pain with medication. | 0 (0) | 0 (0) | 0 (0) | 3 (1) |
| Communication. | 0 (0) | 0 (0) | 0 (0) | 3 (1) |
| Provide flexible care. | 0 (0) | 0 (0) | 3 (1) | 0 (0) |

Replies to two open-ended questions regarding additional training were examined as well. In reply to what topics staff would like classroom training in, roughly one-third of the respondents either did not provide a response or stated there are no topics they would like training in, both at time 1 and time 2. Nevertheless, Table 6 indicates that at both data collection periods, training in behavioural management was cited by the greatest number of MPN staff. Related topics were suggested at time 1 as well, including activities for residents with Alzheimer disease and medication use. Information on lifts/transfers, dealing with unexpected situations and handling grief were suggested as well, although none of these topics were suggested at time 2.

Regarding the question of what aspects of caregiving staff would like hands-on training in, Table 7 shows that nearly three-quarters of staff either did not provide a response or stated there are no topics in which they would like training. In addition, at time 1 staff indicated they would like hands-on training in behavioural management and recreational activities for residents, as well as lifts/transfers. At time 2, MPN staff provided generally vague replies, such as, "anything, but not sure what."

Table 6. Percent and frequency (in brackets) of staff responses to question, "Are there topics related to care for persons with Alzheimer disease you would like to have more classroom training in? If yes, please indicate which areas."

| | MPN (n=16) | | SCUs (n=35) | |
|---|---|---|---|---|
| Response | Time 1 | Time 2 | Time 1 | Time 2 |
| No response. | 19 (3) | 19 (3) | 37 (13) | 40 (14) |
| No topics. | 13 (2) | 19 (3) | 14 (5) | 11 (4) |
| Behavioural management. | 25 (4) | 31 (5) | 9 (3) | 9 (3) |
| General information on Alzheimer disease. | 1 (1) | 1 (1) | 6 (2) | 14 (5) |
| Anything new. | 19 (3) | 1 (1) | 6 (2) | 6 (2) |
| Changes associated with disease progression. | 0 (0) | 0 (0) | 14 (5) | 0 (0) |
| Caring for residents with Alzheimer disease. | 0 (0) | 0 (0) | 9 (3) | 9 (3) |
| New research findings. | 0 (0) | 1 (1) | 9 (3) | 3 (1) |
| Activities for residents with Alzheimer disease. | 1 (1) | 13 (2) | 1 (1) | 6 (2) |
| Dealing with unexpected situations. | 1 (1) | 0 (0) | 0 (0) | 0 (0) |
| Handling grief. | 1 (1) | 0 (0) | 0 (0) | 0 (0) |
| Lifts, transfers. | 1 (1) | 0 (0) | 0 (0) | 0 (0) |
| Medication use for Alzheimer disease residents. | 1 (1) | 0 (0) | 0 (0) | 0 (0) |

(continued)

| | MPN (n=16) | | SCUs (n=35) | |
|---|---|---|---|---|
| Response | Time 1 | Time 2 | Time 1 | Time 2 |
| Special care unit-related research. | 0 (0) | 0 (0) | 1 (1) | 0 (0) |
| Values, philosophy of special care units. | 0 (0) | 0 (0) | 1 (1) | 0 (0) |
| Inservices. | 0 (0) | 0 (0) | 1 (1) | 0 (0) |
| Dealing with residents' families. | 0 (0) | 1 (1) | 0 (0) | 0 (0) |
| Enhancing residents' abilities. | 0 (0) | 0 (0) | 0 (0) | 3 (1) |
| How to be less task-oriented. | 0 (0) | 0 (0) | 0 (0) | 3 (1) |
| Other* | 0 (0) | 0 (0) | 1 (1) | 9 (3) |

* Responses indicate concern that not all staff members working on the unit received training.

Table 7. Percent and frequency (in brackets) of staff responses to question, "Are there any aspects of caregiving you would like to have more hands-on training in? If yes, please indicate which areas."

| | MPN (n=16) | | SCUs (n=35) | |
|---|---|---|---|---|
| Response | Time 1 | Time 2 | Time 1 | Time 2 |
| No response. | 38 (6) | 38 (6) | 63 (22) | 54 (19) |
| No topics. | 25 (4) | 25 (4) | 11 (4) | 14 (5) |
| Behavioural management. | 13 (2) | 0 (0) | 1 (1) | 23 (8) |
| Personal care. | 1 (1) | 0 (0) | 0 (0) | 0 (0) |

(continued)

| | MPN (n=16) | | SCUs (n=35) | |
|---|---|---|---|---|
| Response | Time 1 | Time 2 | Time 1 | Time 2 |
| Recreation activities. | 1 (1) | 0 (0) | 0 (0) | 3 (1) |
| Medical procedures (e.g., changing dressings, administering medications). | 0 (0) | 1 (1) | 9 (3) | 3 (1) |
| Alzheimer disease. | 1 (1) | 0 (0) | 6 (2) | 0 (0) |
| Anything but not sure what. | 0 (0) | 25 (4) | 0 (0) | 0 (0) |
| Lifts, transfers. | 1 (1) | 1 (1) | 0 (0) | 0 (0) |
| Cultural and religious backgrounds. | 0 (0) | 0 (0) | 1 (1) | 0 (0) |
| Family support. | 0 (0) | 0 (0) | 1 (1) | 0 (0) |
| Down's syndrome. | 0 (0) | 0 (0) | 0 (0) | 3 (1) |
| Other* | 0 (0) | 0 (0) | 1 (1) | 1 (1) |

*Respondent at time 1 indicated she would like to be involved in training new staff. Respondent at time 2 stated that "nothing can be done" and that there are "no heroic measures".

## Differences Between MPN and the SCUs

No differences between MPN and SCU staff were found for scores on the Alzheimer Disease Knowledge Test (Dieckmann et al., 1988) or the True-False Test (Knight, 1995), as indicated by a non-significant care setting effect, $F(4,43) = 0.40$, $p = 0.81$.

Table 5 indicates that at time 1, "making sure residents feel happy and/or comfortable", and "providing a clean and/or safe environment" were two of the three most frequently offered responses by both MPN and SCU staff when asked to "Briefly state three points which summarize the staff's day-to-day goals when delivering care to the residents of this long-term care setting." However, while nearly one-half of MPN

respondents at time 1 said "maximizing resident independence" was one of their day-to-day goals, only one-seventh of SCU staff offered the same response. Moreover, approximately one-half of the SCU staff said that providing for the residents' basic needs was one of their day-to-day goals, and this reply was given by twice the proportion of SCU staff who gave the next most popular answer. In contrast, only three of 16 MPN staff listed the provision of residents' basic needs as a goal. Other noteworthy differences at time 1 include the finding that one-quarter of MPN staff stated providing a home-like atmosphere was a goal, in comparison to only one SCU staff member who offered this response. On the other hand, no MPN staff members listed the provision of emotional/spiritual needs as a goal, while four SCU staff members did.

As was the case at time 1, "making sure residents feel happy and/or comfortable," and "providing a clean and/or safe environment" were two of the more popular responses offered by both MPN and SCU staff at time 2. And, as in time 1, providing for residents' basic needs was clearly the most predominant response offered by SCU staff at time 2, whereas less than one-quarter of MPN staff offered basic needs as a goal. For both MPN and SCU staff, however, providing residents activities and stimulation was one of the more popular responses during the second data collection period.

As summarized in Tables 9 and 10, large proportions of both MPN and SCU staff either did not respond or stated there were no topics they wanted training in, particularly with regard to hands-on training. At time 1 and time 2, the topic MPN staff indicated most often they wanted classroom training in was behavioural management, whereas SCU staff indicated they wanted information pertaining to Alzheimer disease in general and its progression, as well as in managing and caring for Alzheimer residents. One other noteworthy finding is that at time 2, three SCU staff members expressed concern that not all SCU staff members received adequate training.

## Attitudes

### Differences Between Time 1 and Time 2

To determine whether staff attitudes became be more positive with time, time 1 scores from Kogan's (1961) Old People Scale and the Attitude Toward Dementia Patients Scale (Sandman et al., 1988) were compared to those at time 2. There were no statistically significant differences between the time 1 and time 2 scores, as indicated by the non-significant time, $F(5,42) = 1.98$, $p = .10$, and Care Setting X Time effects, $F(5,42) = 0.46$, $p = .81$.

### Differences Between MPN and the SCUs

No differences in attitudes between MPN and SCU staff were found, as indicated by a non-significant care setting effect, $F(4,43) = 0.40$, $p = 0.81$, for both Kogan's (1961) Old People Scale scores and the Attitude Toward Dementia Patients Scale (Sandman et al., 1988) scores.

## Staff Perceptions and Stress

### Differences Between Time 1 and Time 2

To examine whether staff stress would decrease as they combined their training with their experiences, scores on the Caregiver Stress Inventory (Maas, 1988) and the Maslach Burnout Inventory (Maslach & Jackson, 1981) were compared between time 1 and time 2. Multivariate analyses indicate that scores on the Caregiver Stress Inventory (Maas, 1988) differed between time 1 and time 2, $F(3,41) = 4.57$, $p = .007$. Further univariate analyses reveal patient behaviours scores were less favourable at time 2 ($M = 78.22$, $SD = 27.52$) than at time 1 ($M = 70.11$, $SD = 24.04$) for MPN and SCU staff overall, $t(43) = 2.95$, $p = .005$. The Care Setting X Time effect was not statistically significant , $F(3,41) = 0.45$, $p = .722$. In contrast, neither the time effect, $F(2,45) = 1.88$, $p = .16$, nor care setting by time effect, $F(2,45) = 0.38$, $p = .69$, were significant for the Maslach Burnout Inventory scores (Maslach & Jackson, 1981), indicating scores did not differ between time 1 and time 2.

In addition to completing the Caregiver Stress Inventory (Maas, 1988) and the Maslach Burnout Inventory (Maslach & Jackson, 1981), staff were asked to list obstacles which made it difficult to carry out their goals on a day-to-day basis. Sample sizes are too small to determine whether differences between time 1 and time 2 staff responses are statistically significant and not simply due to chance. Therefore, only descriptive data in the form of frequencies of responses are reported. As seen in Table 8, at both time 1 and time 2, responses included care setting and resident factors more so than personal or organizational factors. One-quarter of MPN staff indicated insufficient time to spend with residents was a difficulty they typically encountered. Staff-related problems were cited as well, including insufficient staff or insufficient time to accomplish everything they wanted to, conflicts among staff members, and inadequately trained staff. In addition, three staff members stated non-receptive or aggressive residents were problematic.

At time 2, the number of staff who referred to the lack of staff/time more than tripled. In addition, two members cited a new concern, namely conflicts with the administration. On the other hand, at time 2 no one indicated staff training or conflicts among other direct-care staff members were barriers to care delivery.

Table 8. Percent and frequency (in brackets) of staff responses to, "Are there things that make it difficult for you to carry out the goals on a day-to-day basis?"

| | MPN (n=16) | | SCUs (n=35) | |
|---|---|---|---|---|
| Response | Time 1 | Time 2 | Time 1 | Time 2 |
| No response. | 19 (3) | 13 (2) | 26 (9) | 23 (8) |
| No difficulties. | 13 (2) | 13 (2) | 14 (5) | 17 (6) |

(continued)

| | MPN (n=16) | | SCUs (n=35) | |
|---|---|---|---|---|
| Response | Time 1 | Time 2 | Time 1 | Time 2 |
| Care Setting Factors: | | | | |
| Not enough staff/time. | 13 (2) | 44 (7) | 31 (11) | 51 (18) |
| Not enough time to spend with other residents. | 25 (4) | 13 (2) | 14 (5) | 11(4) |
| Conflicts among staff (e.g., attitudes, behaviours). | 13 (2) | 0 (0) | 6 (2) | 11(4) |
| Conflict with administration. | 0 (0) | 13 (2) | 3 (1) | 0 (0) |
| Unexpected events/emergencies. | 1 (1) | 0 (0) | 3 (1) | 0 (0) |
| Residents overstimulated; inappropriate activities. | 1 (1) | 1 (1) | 0 (0) | 0 (0) |
| Change in facility's philosophy of care. | 0 (0) | 1 (1) | 0 (0) | 0 (0) |
| Part-time work. | 0 (0) | 1 (1) | 0 (0) | 0 (0) |
| Too many meetings and paper work. | 0 (0) | 0 (0) | 0 (0) | 1 (1) |
| Rigid schedules. | 0 (0) | 0 (0) | 0 (0) | 1 (1) |
| Staff trained inadequately. | 1 (1) | 0 (0) | 0 (0) | 0 (0) |
| Casual staff working on unit. | 0 (0) | 0 (0) | 3 (1) | 3 (1) |

(continued)

| | MPN (n=16) | | SCUs (n=35) | |
|---|---|---|---|---|
| Response | Time 1 | Time 2 | Time 1 | Time 2 |
| Resident Factors: | | | | |
| Residents not receptive or are aggressive. | 19 (3) | 1 (2) | 23 (8) | 11 (4) |
| Family demands and expectations. | 1 (1) | 0 (0) | 17 (6) | 0 (0) |
| Residents who should be in other settings. | 0 (0) | 0 (0) | 1 (1) | 0 (0) |
| Changing behaviours. | 0 (0) | 0 (0) | 1 (1) | 0 (0) |
| Demanding emotional and physical needs of residents. | 0 (0) | 0 (0) | 0 (0) | 1 (1) |
| Full moon. | 0 (0) | 0 (0) | 3 (1) | 0 (0) |
| Medical-related difficulties. | 0 (0) | 0 (0) | 3 (1) | 0 (0) |
| Personal Factors: | | | | |
| Own emotional health. | 0 (0) | 0 (0) | 3 (1) | 0 (0) |
| Absent from work. | 0 (0) | 0 (0) | 3 (1) | 0 (0) |
| Stress. | 0 (0) | 0 (0) | 3 (1) | 0 (0) |
| Organizational Factors: | | | | |
| Dietary's poor imagination. | 0 (0) | 0 (0) | 0 (0) | 1 (1) |
| Lack of necessary supplies. | 0 (0) | 0 (0) | 3 (1) | 0 (0) |

Along with obstacles to care delivery, staff were also asked what they do not like about their jobs. As presented in Table 9, more MPN staff at time 1 than at time 2 stated they did not like it when residents had bad days, deteriorated, or died. In addition, MPN staff expressed dislike for some staff- and administration-related issues at time 1, including staff conflicts, lack of organization among staff, shift schedules, poor pay, job-related

stress, job instability and lack of staff support. Staff- and management- related issues were noted at time 2, as well. For example, staff reported conflicts with management, drift from the philosophy of care and conflicts in policies as difficulties they encountered in their jobs. On the other hand, job instability and the lack of staff organization were not cited as problems at time 2.

Staff absenteeism was included as a measure of staff stress as well. The main effect of time was not statistically significant, $F$ (1,44) = 3.82, p=.06, indicating staff absenteeism did not differ between time 1 ($M$ = 3.47, $SD$ = 0.33) and time 2 ($M$ = 3.62, $SD$ = .49). Moreover, the interaction effect of Time X Care Setting was not statistically significant, $F$ (2,44) = 1.61, p=.21, indicating differences in staff absenteeism over time were similar among staff working at MPN ($M$ = 3.48, $SD$ = 0.32; $M$ = 3.59, $SD$ = 0.42, for time 1 and time 2, respectively), SCU A ($M$ = 3.60, $SD$ = 0.43; $M$ = 3.58, $SD$ = 0.28, for time 1 and time 2, respectively) and SCU B ($M$ = 3.34, $SD$ = 0.20; $M$ = 3.55, $SD$ = 0.48, for time 1 and time 2, respectively).

## Differences Between MPN and the SCUs

To examine the hypothesis that MPN and SCU staff would differ in the amount of stress they experience, differences between these two groups in their Caregiver Stress Inventory (Maas, 1988) and Maslach Burnout Inventory (Maslach & Jackson, 1981) were assessed. Care setting effects were found for subscale scores on the Caregiver Stress Inventory (Maas, 1988), $F(3,41) = 3.39$, $p = 0.03$, and the Maslach Burnout Inventory (Maslach & Jackson, 1981), $F(2,45) = 6.39$, $p = 0.004$. Further univariate tests (using the Bonferonni correction) indicate MPN staff had more favourable Caregiver Stress Inventory

Table 9. Percent and frequency (in brackets) of staff responses to question, "What do you not like about your job?"

| | MPN (n=16) | | SCUs (n=35) | |
|---|---|---|---|---|
| Response | Time 1 | Time 2 | Time 1 | Time 2 |
| No response. | 0 (0) | 0 (0) | 9 (3) | 3 (1) |
| Resident Factors: | | | | |
| When residents have a bad day, deteriorate or die. | 25 (4) | 19 (3) | 6 (2) | 3 (1) |
| Difficult resident behaviours (e.g., aggression). | 1 (1) | 0 (0) | 9 (3) | 0 (0) |
| Residents frustrated because they can't go home. | 0 (0) | 0 (0) | 3 (1) | 0 (0) |
| Conflicts with families. | 0 (0) | 0 (0) | 3 (1) | 0 (0) |
| Care Setting Factors: | | | | |
| Staff conflicts. | 1 (1) | 1 (1) | 17 (6) | 20 (7) |
| Not enough time to spend with residents. | 1 (1) | 13 (2) | 20 (7) | 9 (3) |
| Not enough staff/getting chores done according to schedule. | 0 (0) | 19 (3) | 9 (3) | 20 (7) |
| Conflicts with management. | 0 (0) | 19 (3) | 0 (0) | 0 (0) |
| Drift from philosophy of care/conflicts in policies. | 0 (0) | 19 (3) | 3 (1) | 0 (0) |
| Sometimes staff not organized. | 1 (1) | 0 (0) | 0 (0) | 0 (0) |

(continued)

| | MPN (n=16) | | SCUs (n=35) | |
|---|---|---|---|---|
| Response | Time 1 | Time 2 | Time 1 | Time 2 |
| Lack of staff support. | 1 (1) | 0 (0) | 0 (0) | 3 (1) |
| Stress, demands of the job. | 1 (1) | 1 (1) | 6 (2) | 3 (1) |
| Restraining residents/restraints imposed by others. | 0 (0) | 0 (0) | 3 (1) | 3 (1) |
| Poor air quality and too hot. | 0 (0) | 0 (0) | 0 (0) | 3 (1) |
| Care Setting Factors: | | | | |
| Shift schedules (e.g., odd hours, having to work weekends.) | 19 (3) | 19 (3) | 0 (0) | 9 (3) |
| Poor pay. | 1 (1) | 1 (1) | 0 (0) | 9 (3) |
| Job instability. | 1 (1) | 0 (0) | 0 (0) | 0 (0) |
| Off-unit duties. | 0 (0) | 0 (0) | 3 (1) | 0 (0) |
| Overtime. | 0 (0) | 0 (0) | 0 (0) | 3 (1) |
| Personal Factors: | | | | |
| People changeable. | 0 (0) | 0 (0) | 0 (0) | 1 (1) |
| Feel not doing enough for residents. | 0 (0) | 0 (0) | 0 (0) | 1 (1) |

scores than SCU staff with regard to patient behaviours (M = 60.67, SD = 15.90, M = 81.60, SD =16.361, for MPN and SCU staff respectively), t(43) = -2.97, p = .005, resources/knowledge, (M = 28.13, SD = 11.50, M = 36.95, SD =8.66 , for MPN and SCU staff, respectively), t(43) = -2.62, p = 0.01, and physical care, (M = 11.63, SD = 5.07, M = 14.86, SD =3.29, for MPN and SCU staff, respectively), t(43) = -2.71, p = 0.001. In addition, MPN staff (M = 9.50, SD = 6.89) reported less emotional exhaustion than SCU staff (M = 15.97, SD =14.31), as measured by the Maslach Burnout Inventory, t(46) = -3.49, p = .001.

Staff stress was examined as well by comparing the kinds of obstacles MPN and SCU staff face. As with the other open-ended questions, small sample sizes prohibit statistical testing to determine whether these differences are statistically significant. Both MPN and SCU staff cited "not enough time to spend with residents" and "residents not receptive or are aggressive" more frequently than other kinds of obstacles, as summarized in Table 8. In contrast, at time 1 and time 2 SCU staff listed a variety of obstacles that were not noted by MPN staff. For instance, SCU staff stated the lack of supplies, their own emotional health, and residents who should be cared for in other centres presented difficulties for them at time 1, and conflicts among staff, safety hazards and rigid schedules were listed as problems at time 2. Obstacles that were unique to MPN include staff concerns that residents were overstimulated or participating in inappropriate activities, that there had been a change in the centre's philosophy of care and that some staff members were only working part-time. MPN staff responses also differed from those of SCU staff at time 1 in that no one difficulty was noted overwhelmingly by MPN staff, whereas roughly one-third of SCU staff expressed concern regarding insufficient staff/time. Moreover, "family demands and expectations" were listed as problems more frequently by SCU staff than MPN staff. At time 2, MPN and SCU staff responses became more similar in that both groups reported "not enough staff/time" more often than any other difficulty. Despite the number of obstacles noted by staff, it is interesting to note that two staff from

MPN at time 1 and time 2, and five SCU staff at time 1 and six SCU staff at time 2 indicated they experienced no difficulties carrying out their goals.

In addition to examining obstacles staff face, staff stress also was assessed by asking staff to report aspects of their jobs they do not like. As was the case regarding obstacles staff face, there are a number of aspects SCU staff reported they do not like about their jobs that were not cited by MPN staff, as presented in Table 9. For instance, SCU staff members indicated they dislike conflicts with families, restraining residents, overtime and the poor air quality of their units, whereas no MPN staff cited these concerns. Other differences between MPN and SCU staff responses include the findings that, at time 1, residents who have a bad day, deteriorate or die, as well as shift schedules were the two most frequent complaints for MPN staff, whereas staff conflicts and not enough time to spend with residents were noted by more SCU staff than any other grievance. At time 2, there was no one grievance reported by MPN staff that predominated over the others. In contrast, staff conflicts and not enough staff were reported more frequently by SCU staff at time 2 than other grievances.

Differences between care settings in staff stress were examined by comparing absenteeism and turnover rates as well. Regarding absenteeism, the main effect of care facility was not statistically significant, $F(2,44) = .87$, $p=.43$, indicating staff absenteeism did not vary among staff working at MPN ($\underline{M} = 3.54$, $\underline{SD} = .36$), SCU A ($\underline{M} = 3.59$, $\underline{SD} = 0.30$), and SCU B ($\underline{M} = 3.51$, $\underline{SD} = 0.40$).

In contrast to the hypothesis that MPN staff turnover would differ from that of the SCUs, analyses revealed staff turnover was not related to care setting, $\underline{x}2(1, N = 68) = 0.09$, $p > .76$. Examination of the data for each SCU indicates turnover rates at MPN and SCU A were very similar and relatively high compared to that of SCU B. Turnover rates at MPN and SCU A were 29.41% and 30.43%, respectively, whereas the turnover rate at SCU B was only 4.35%. As indicated in Table 10, however, reasons for staff attrition within MPN and SCU A differed. In SCU A, more than half the staff members absent at

time 2 were bumped, while no staff at MPN left for this reason. In contrast, two MPN but no SCU A staff quit.

Table 10. Percent and frequency (in brackets) of reasons for staff attrition.

| | Care Setting | | |
|---|---|---|---|
| Time 2 Status | MPN | SCU A | SCU B |
| Present: | | | |
| No change | 73 (16) | 65 (15) | 87 (20) |
| Working nights | 5 (1) | 4 (1) | 0 (0) |
| On maternity leave | 0 (0) | 0 (0) | 4 (1) |
| Promoted | 0 (0) | 0 (0) | 4 (1) |
| Total present | 77 (17) | 70 (16) | 96 (22) |
| Absent: | | | |
| Quit | 9 (2) | 0 (0) | 4 (1) |
| Bumped | 0 (0) | 7 (4) | 0 (0) |
| On sick leave | 5 (1) | 9 (2) | 0 (0) |
| On leave of absence | 5 (1) | 0 (0) | 0 (0) |
| Undergoing workers' rehabilitation | 5 (1) | 0 (0) | 0 (0) |
| Retired | 0 (0) | 4 (1) | 0 (0) |
| Total absent | 23 (5) | 30 (7) | 4 (1) |

## Sources of Satisfaction

### Differences Between Time 1 and Time 2

In response to the question of what staff members like about their jobs, the feeling that they made a difference in the residents' quality of life was cited by the greatest number of MPN staff, both at time 1 and time 2. As indicated in Table 11, other popular responses at time 1 and time 2 include working with older adults or Alzheimer residents and interacting with residents. At time 1, MPN staff stated they liked working with other staff, though the number of staff who offered this response declined at time 2.

### Differences Between MPN and the SCUs

MPN and SCU staff provided similar responses to the question of what staff like about their jobs. MPN and SCU staff indicated they strongly favour working with older adults, both at time 1 and time 2. Along with working with older adults, Table 11 indicates staff from both care settings also enjoy working with other staff members. It is interesting to note that although at time 2 SCU staff cited staff conflicts as an obstacle to the day-to-day care of residents, working with staff and teamwork were two of the more popular responses to the question of what they like about their jobs, both at time 1 and time 2.

Table 11. Percent and frequency (in brackets) of staff responses to question, "What do you like about your job?"

| | MPN (n=16) | | SCUs (n=35) | |
|---|---|---|---|---|
| Response | Time 1 | Time 2 | Time 1 | Time 2 |
| No response. | 0 (0) | 0 (0) | 9 (3) | 9 (3) |
| Resident Factors: | | | | |
| Working with/caring for older adults or Alzheimer residents. | 56 (9) | 44 (7) | 60 (21) | 54 (19) |
| Making a difference in residents' quality of life. | 50 (8) | 38 (6) | 14 (5) | 17 (6) |
| Interacting/spending time with residents. | 50 (8) | 31 (5) | 9 (3) | 9 (3) |
| When residents reach a milestone. | 0 (0) | 1 (1) | 0 (0) | 0 (0) |
| When residents remember your name. | 0 (0) | 1 (1) | 0 (0) | 0 (0) |
| Contact with residents' families. | 1 (1) | 13 (2) | 3 (1) | 6 (2) |
| Residents remind me of grandparents. | 0 (0) | 0 (0) | 0 (0) | 3 (1) |
| Care Setting Factors: | | | | |
| Working with staff, teamwork. | 31 (5) | 13 (2) | 20 (7) | 17 (6) |
| The challenges. | 13 (2) | 13 (2) | 23 (8) | 6 (2) |
| Like the work/is interesting. | 0 (0) | 0 (0) | 3 (1) | 3 (1) |
| Working with people. | 13 (2) | 25 (4) | 6 (2) | 9 (3) |
| The atmosphere/philosophy. | 13 (2) | 19 (3) | 3 (1) | 9 (3) |
| Variety; every day is different. | 1 (1) | 1 (1) | 3 (1) | 14 (5) |

(continued)

| | MPN (n=16) | | SCUs (n=35) | |
|---|---|---|---|---|
| Response | Time 1 | Time 2 | Time 1 | Time 2 |
| Helping with planning activities. | 0 (0) | 0 (0) | 3 (1) | 0 (0) |
| Meeting people. | 0 (0) | 0 (0) | 3 (1) | 0 (0) |
| Freedom to make decisions, solve problems, be creative. | 0 (0) | 0 (0) | 3 (1) | 3 (1) |
| Can wear casual clothes. | 0 (0) | 1 (1) | 0 (0) | 0 (0) |
| Personal Factors: | 0 (0) | 0 (0) | 9 (3) | 9 (3) |
| Knowing that doing a good job. | 13 (2) | 0 (0) | 11 (4) | 6 (2) |
| Learning new things. | 0 (0) | 1 (1) | 6 (2) | 3 (1) |
| I begin to appreciate life. | 0 (0) | 1 (1) | 0 (0) | 0 (0) |
| Organizational Factors: | | | | |
| Getting paid. | 0 (0) | 1 (1) | 0 (0) | 0 (0) |
| Other: | | | | |
| Everything. | 0 (0) | 0 (0) | 11 (4) | 0 (0) |

## Resident Activities

### Medication Use

To enhance interpretability, medications were collapsed into the following categories: desyrel, trazadone, paxil, aventyl, prozac, sinequan, ludiomil, desipramine, and anafranil were categorized as antidepressants; buspar, serax, ativan, and chloral hydrate, rivotril, and xanax were categorized as anxiolytics; loxapine, mellaril, haldol, and risperdal were categorized as neuroleptics.

### Differences Between Time 1 and Time 2

There was little change between time 1 and time 2 in the number of MPN and SCU residents taking medications. Specifically, at time 1 nine of 22 MPN residents

(40.9%) were using psychotropics; at time 2 this figure increased slightly to 10 (45.5%) residents. The number of SCU residents taking medications was slightly higher at time 2 (13 of 20 residents, or 65.0%) than at time 1 (11 residents, or 55.0%). However, McNemar's test of differences between time 1 and time 2 in the proportions of residents taking medications was not significant for MPN, $x^2$ (1, N=22) = 1.00, p = 1.00, or the SCUs, $x^2$ (1, N=20) = 1.00, p =.63. Of the residents taking psychotropics, the average number of medications administered remained stable between the time 1 and time 2 assessment periods, both at MPN (N= 9, M = 1.56, SD = 1.01; N= 10, M = 1.60, SD = .97) and the SCUs (N= 11, M = 1.46, SD = .69; N= 13, M = 1.31, SD = .63). Again, Wilcoxin's test for paired samples revealed no statistically significant differences between time 1 and time 2 for MPN, T = -.91, p = .36, or the SCUs, T = -.32, p = .75. Table 12 shows the number and proportion (in brackets) of MPN and SCU residents who used antidepressants, anxiolytics and neuroleptics during both data collection periods. Once again, McNemar's test of differences between time 1 and time 2 in the proportions of residents taking these three classes of drugs were not significant for MPN or the SCUs. Thus, the proportions of MPN and SCU residents taking antidepressants ($x^2$ (1, N=22) = .33, p = 1.00, for MPN, and $x^2$ (1, N=22) = 1.00, p = .63, for the SCUs), anxiolytics ($x^2$ (1, N=22) = 2.0, p = .50, for MPN, and $x^2$ (1, N=22) = 1.00, p = 1.09, for the SCUs)or neuroleptics ($x^2$ (1, N=22) = 1.00, p = 1.00, for MPN, and $x^2$ (1, N=22) = .00, p = 1.00, for the SCUs) did not differ between time 1 and time 2.

Table 12. Percent and number (in brackets) of residents who took medications at time 1 and time 2.

| | MPN (n=22) | | SCUs (n=20) | |
|---|---|---|---|---|
| Medication type | Time 1 | Time 2 | Time 1 | Time 2 |
| Antidepressants | 27 (6) | 32 (7) | 15 (3) | 25 (5) |
| Anxiolytics | 5 (1) | 14 (3) | 20 (4) | 15 (3) |
| Neuroleptics | 27 (6) | 23 (5) | 40 (8) | 45 (9) |

The number of MPN residents who took a combination of medications was very similar at time 1 and time 2, with three residents at time 1 and four residents at time 2 taking medications from more than one class concurrently. Likewise, the number of SCU residents taking combinations of medications did not change from time 1 to time 2, with three SCU residents at both data collection points taking more than one type of drug at the same time.

A slight increase in medications given on an "as needed" basis was noted for MPN between time 1 and time 2: At time 1, only one resident received PRNs and this figure increased to three residents at time 2. A similar pattern was observed in the SCUs: At time 1, PRNs were given to two SCU residents, and at time 2 this figure increased to three.

**Differences Between MPN and the SCUs**

Although greater proportions of SCU residents than MPN residents were taking medications at time 1 and at time 2, differences between MPN and the SCUs were not statistically significant at either data collection period: $x^2(1, N=42) = 0.83$, $p = .36$, and $x^2(1, N = 42) = 1.62$, $p = .20$, for time 1 and time 2, respectively. Moreover, at time 1 and time 2, the average number of psychotropics residents took was less than two, for both MPN and the SCUs. Table 12 indicates a greater proportion of MPN residents than SCU residents took antidepressants, whereas greater proportions of SCU residents took anxiolytics and neuroleptics than MPN residents. At time 1, similar proportions of MPN

and SCU residents took drugs from more than one category, although slight differences are evident for the time 2 data. At time 1, three of the 22 MPN residents (p=.14) and three of the 20 SCU residents (p=.13) took medications from more than one category; at time 2, four of the 22 MPN residents (p=.18) and three of the SCU residents (p=.13) took medications from more than one category. Few MPN or SCU residents were given medications on an "as needed" basis. At time 1, one of 22 MPN residents and two of 20 SCU residents received PRNs. MPN and the SCUs resembled each other again at time 2, with three of 22 MPN residents and three of 20 SCU residents receiving PRNs. No resident at either MPN or the SCUs was given PRNs on more than two occasions within the two-week data collection periods at time 1 or time 2.

## Physical Restraint Use

### Differences Between Time 1 and Time 2

No MPN residents were restrained at time 1 or time 2. In contrast, the proportion of residents who were restrained increased from time 1 to time 2 in both SCUs, although these differences were not statistically significant: Six of nine (66.67%) SCU A residents at time 1 and nine of 11 (88.89%) SCU A residents at time 2 were physically restrained at least once. Similarly, in SCU B four (36.4%) residents were restrained at time 1 and five (53.5%) were restrained at time 2.

Although the proportion of SCU residents who were restrained was higher at time 2 than at time 1, the mean number of restraints used per resident at either SCU changed very little from time 1 to time 2: The average number of restraints used on SCU A residents was 2.08 (SD = 1.10) at time 1 and 2.25 (SD = 0.89) at time 2. Similarly, the mean number of restraints used at SCU B was 2.50 (SD = 1.73) at time 1 and 2.40 (SD = 1.52) at time 2. Although the average number of times residents of each SCU were restrained was smaller at time 1 than at time 2, these differences did not approach statistical significance. At time 1, the mean number of times SCU A residents were

restrained was 40.67 (SD = 34.13). At time 2 this figure dropped to 15.50 (SD = 23.05), less than half of the time 1 value. A similar trend was observed in SCU B: The mean number of times residents were restrained at time 1 was 18.25 (SD = 20.11) and at time 2 it dropped to 9.50 (SD = 16.34). The reader should note that these results are based on a small number of residents, and it is likely that the power to detect true differences was severely restricted.

**Differences Among MPN and the SCUs**

MPN maintains a "no restraint" policy. As a result, no residents from this care setting were restrained. In contrast, residents from both SCUs were restrained, although patterns of restraint use differ between the SCUs. Greater proportions of SCU A residents than SCU B residents were restrained, both at time 1 and time 2. In fact, at time 1, SCU A residents were restrained in nearly two times the proportion that SCU B residents were (p=.67 vs. p=.36)[1]. Although the difference is attenuated, a greater proportion of SCU A residents than SCU B residents were restrained at time 2, as well : Eighty-nine percent of SCU A residents were restrained at least once, compared to 54% of SCU B residents. Unfortunately, too few cells contained the minimum expected frequency required for $x^2$ tests of significance. SCU A residents were restrained more often than SCU B. At time 1, the mean number of times SCU A residents were restrained was 40.67 (SD = 34.13) compared to SCU B residents, who were restrained an average of 18.25 (SD = 20.11) times, U = -2.0501, p = .04. Similarly, at time 2 the mean number of times SCU A residents were restrained was 18.25 (SD = 20.11), while SCU B residents were restrained an average of 9.50 (SD = 16.34) times, U = -2.5178, p = .01. On the other hand, patterns of restraint use were similar in that the mean number of restraints used with residents in each SCU was slightly more than two, with means of 2.08 (SD = 1.10) and 2.50 (SD = 1.73) at SCU A and SCU B, respectively, at time 1, and 2.25 (SD = 0.89) and 2.40 (SD = 1.52) at SCU A and SCU B, respectively, at time

[1] Proportions are denoted as "p" and can be distinguished from the p-values reported with statistical tests in that only the latter are underlined.

2. Differences between the SCUs were not statistically significant at time 1 or time 2.

Although sample sizes were too small to permit statistical testing, the types of restraints used in each of the SCUs appear to differ as well, as indicated in Table 13. For instance, more side rails and commodes were used on more residents than any other restraints at SCU A, whereas glider chairs and gait belts were two of the more popular restraints at SCU B.

Table 13. Number of residents who used each type of restraint.

| | SCU A | | SCU B | |
|---|---|---|---|---|
| | Time 1 | Time 2 | Time 1 | Time 2 |
| Restraint | (n=6) | (n=8) | (n=4) | (n=5) |
| Side rails | 4 | 6 | 0 | 2 |
| Commode with soft posey/seat belt | 3 | 3 | 0 | 0 |
| Lap seat belt | 2 | 1 | 0 | 0 |
| Safety belt | 0 | 2 | 1 | 1 |
| Wheelchair | 0 | 1 | 1 | 1 |
| Wheelchair with back close and seat belt | 0 | 1 | 0 | 1 |
| Glider chair | 0 | 0 | 3 | 1 |
| Gait belt | 0 | 0 | 2 | 1 |
| Bed alarm | 0 | 0 | 0 | 1 |

Given that the SCUs differ in the types of restraints used at time 1, it is not surprising that they also differ in the reasons restraints were used. At time 1 in SCU A, the most frequently-cited reasons for restraining residents included helping them rest (3) or keeping them in bed (4); the second most cited reason pertains to A.D.L. assistance,

including toileting (3) and eating (2). In contrast, "other" was cited as a reason for restraint use in four of the 10 instances in SCU B at time 1, whereas rest was cited only once. A.D.L.s, including toileting (3) and eating (2), accounted for the remaining half of the reasons restraints were used. At time 2, the SCUs became more similar to each other: Reasons of rest (4) and keeping residents in bed (4) account for slightly less than half of the 18 instances SCU A residents were restrained. Similarly, rest (2) and keep in bed (3) account for a little less than half of the instances restraints were used in SCU B. In addition, restraints were used in both SCUs to assist residents with A.D.L.s, including toileting (5 and 2 for SCUs A and B, respectively) and eating (4 and 2 for SCUs A and B, respectively). In addition "Other" was cited in one instance in SCU A and in three instances in SCU B.

## Resident Behaviours

Overall, the data reveal marked variability among residents in the spaces they occupied and the behaviours they exhibited. For instance, at time 1, some residents were observed in their own rooms for as little as four percent of the scans, while other residents were observed in their rooms for as much as 77% of the scans. Similarly, at time 2 some MPN residents were observed watching movies or television for as much as 36% of their scans, while others were never observed participating in this activity.

## Use of Space

**Differences between time 1 and time 2.** Overall, the proportions of scans in which MPN residents occupied various spaces at time 1 are remarkably similar to those of time 2. As outlined in Table 14, MPN residents at time 1 were observed for roughly equal proportions of scans in their own rooms, the remaining spaces within their own houses (namely, the hallway, kitchen, and living/dining room), and the rest of the centre (p=.31). Similar patterns were observed at time 2, with residents spending approximately one-third of their time in their own rooms, the remaining spaces within their own houses, and the rest of the centre (p=.31).

Table 14. Mean proportion and standard deviation (in brackets) of scans residents were observed in MPN spaces.

| Location | Time 1 (n=25) | Time 2 (n=25) |
|---|---|---|
| Own house: | | |
| Hallway | 0.08 (.17) | 0.07 (.07) |
| Living/dining room | 0.19 (.15) | 0.23 (.15) |
| Kitchen | 0.08 (.07) | 0.08 (.09) |
| Own room | 0.32 (.21) | 0.30 (.19) |
| Own house total | 0.66 | 0.68 |
| Other houses: | | |
| Hallway | 0.01 (.03) | 0.00 (.01) |
| Living/dining room | 0.01 (.02) | 0.01 (.02) |
| Kitchen | 0.00 (.01) | - |
| Other houses total | 0.03 | 0.01 |
| Other residents' room | 0.01 (.02) | 0.01 (.02) |

(continued)

| Location | Time 1 (n=25) | Time 2 (n=25) |
|---|---|---|
| Common area corridors: | | |
| North corridor | 0.06 (.01) | 0.03 (.04) |
| South corridor | 0.00 (.01) | 0.00 (.01) |
| West corridor | 0.01 (.02) | 0.02 (.02) |
| Northwest corridor | 0.05 (.08) | 0.03 (.05) |
| Common area corridors total | 0.12 | 0.08 |
| Great room | 0.08 (.05) | 0.15 (.08) |
| Sitting room | 0.02 (.03) | 0.02 (.02) |
| Library | 0.01 (.01) | 0.00 (.01) |
| Horticulture room | 0.01 (.02) | 0.01 (.01) |
| Music room | 0.00 (.01) | 0.00 (.01) |
| Arts and crafts room | - | 0.00 (.01) |
| Entertainment room | 0.00 (.02) | 0.01 (.04) |
| Family dining room/kitchen | - | 0.00 (.01) |
| Hair salon | 0.01 (.02) | 0.00 (.01) |
| Courtyards | 0.00 (.01) | - |
| Total (common area) | 0.26 | 0.28 |
| Other | 0.01 (.01) | 0.01 (.01) |
| Off unit | 0.03 (.08) | 0.01 (.02) |
| Missing | 0.00 (.01) | 0.00 (.02) |
| Can't find | 0.00 (.01) | 0.01 (.01) |

Note. Dashes indicate no resident was ever observed in this location. In contrast, a "0" value indicates very few residents were ever observed in this location, resulting in a proportion that is near zero (e.g., 0.00001).

When residents were not in their own rooms or houses during the time 1 observations, they tended to be in the common area corridors (p=.12) or great room (p=.08), as presented in Figure 1.

Figure 1. Mean proportion of scans MPN residents were in locations other than own rooms or own houses at time 1 (n=25).

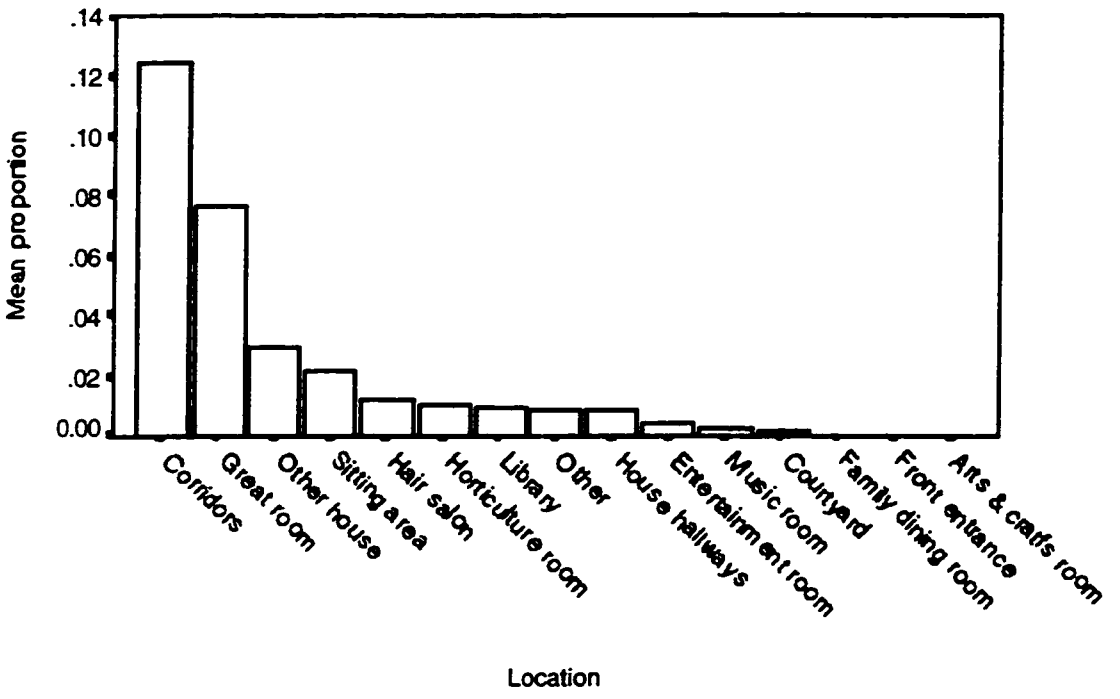
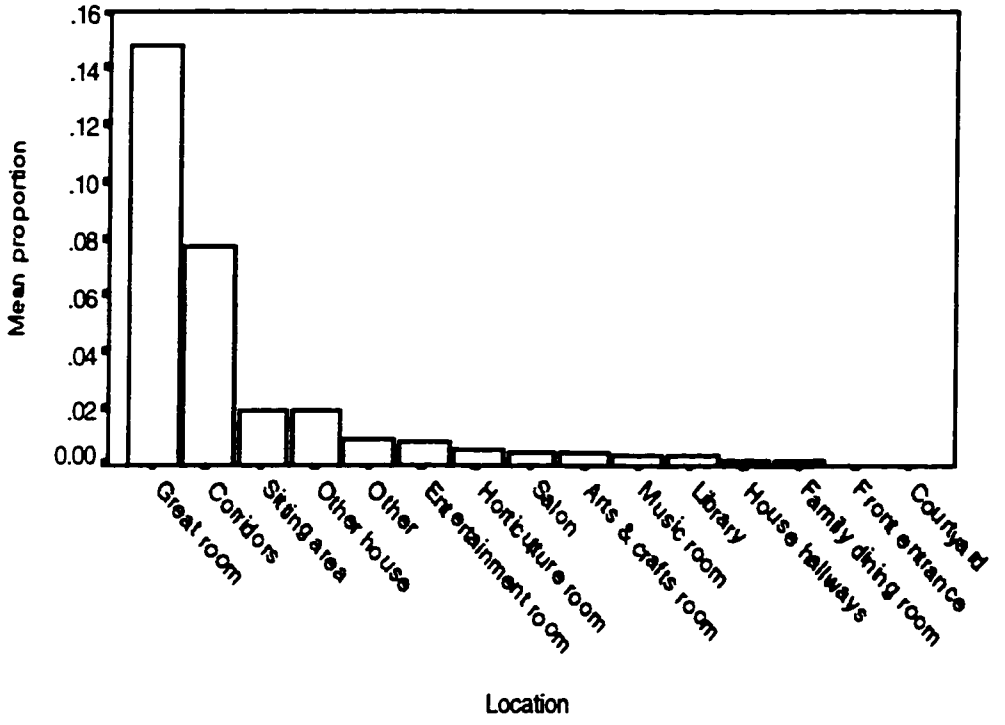



Figure 2 indicates the same pattern was observed at time 2, although the proportion of scans in which they were found in the great room increased (p=.15), while the proportion of scans in which they were found in the common area corridors decreased (p=.08). Figures 1 and 2 also show that at both time 1 and time 2, residents were observed in the remaining spaces of the centre for only small proportions of scans.

Figure 2. Mean proportion of scans MPN residents were in locations other than own rooms or own houses at time 2 (n=25).




**Differences between MPN and the SCUs.** Because of differences in each care setting's physical design, it is not possible to directly compare the residents' occupancy of specific locations within each centre. Alternatively, it is possible to compare the proportions of observed time residents of each centre were found in their own houses/units/wings, other houses/units/ wings and common spaces. This conceptualization reveals unique patterns in resident use of space within each care setting. As outlined in Table 14, MPN residents were found in their own houses for nearly 70% of the scans, in the common spaces for approximately one-quarter of the scans, and rarely in other residents' houses. In contrast, Table 15 reveals SCU A residents were observed within their own units (including the pod area, resident rooms, lounges, alcoves, and corridors which are located within the residents' own units) for more than 70% of the scans (similar to the MPN residents' occupancy of their own houses), but were found in

the common spaces in only five percent of the scans or less, and in other residents' units between one-tenth and one-quarter of the scans. Moreover, SCU B residents differed from both MPN and SCU A residents in their patterns of use of space. Table 16 shows they were observed in their own wings for only one-quarter of the scans, but were found in the common areas for more than half the scans. Like MPN residents, however, they were observed in other residents' wings for less than five percent of the scans.

Table 15. Mean proportion and standard deviation (in brackets) of scans residents were observed in locations throughout SCU A (n=10).

| Location | Time 1 | Time 2 |
|---|---|---|
| Own unit pod: | | |
| Central dining area | 0.32 (.15) | 0.38 (.16) |
| Nursing station | 0.00 (.01) | 0.00 (.01) |
| Kitchen | 0.00 (.01) | 0.01 (.02) |
| Own unit pod total | 0.33 | 0.40 |
| Own room: | | |
| Own room, Main A | 0.08 (.01) | 0.09 (.10) |
| Own room, Main B | 0.08 (.01) | 0.14 (.21) |
| Own room total | 0.15 | 0.22 |
| Other resident room, own side | 0.06 (.05) | 0.05 (.06) |
| Own unit lounges: | | |
| Washroom corridor lounge | 0.01 (.02) | 0.01 (.01) |
| Utility/linen corridor lounge | 0.02 (.02) | 0.00 (.01) |
| Large lounge | 0.08 (.06) | 0.05 (.03) |
| Own unit lounges total | 0.11 | 0.06 |

(continued)

| Location | Time 1 | Time 2 |
|---|---|---|
| Own unit alcoves: | | |
| Washroom corridor alcove | - | 0.00 (.01) |
| Utility/linen corridor alcove | - | - |
| Own unit alcoves total | - | 0.00 (.01) |
| Own unit corridors: | | |
| Washroom corridor | 0.02 (.03) | 0.04 (.05) |
| Utility/linen corridor | 0.02 (.03) | 0.03 (.03) |
| Large lounge corridor | 0.03 (.04) | 0.02 (.02) |
| Own unit corridors total | 0.07 | 0.09 |
| Total (own unit) | 0.72 | 0.82 |
| Other unit pod: | | |
| Central dining area | 0.01 (.02) | 0.01 (.01) |
| Nursing station | 0.00 (.01) | - |
| Kitchen | - | 0.00 (.01) |
| Other unit pod total | 0.02 | 0.01 |
| Other resident room, other unit side | 0.04 (.04) | 0.02 (.03) |
| Other unit lounges: | | |
| Washroom corridor lounge | 0.01 (.02) | 0.00 (.01) |
| Utility/linen corridor lounge | 0.02 (.03) | - |
| Large lounge | 0.06 (.05) | 0.01 (.02) |
| Other unit lounges total | 0.08 | 0.01 |

(continued)

| Location | Time 1 | Time 2 |
|---|---|---|
| Other unit alcoves: | | |
| Washroom corridor alcove | 0.00 (.01) | 0.01 (.02) |
| Utility/linen corridor alcove | 0.01 (.02) | - |
| Other unit alcoves total | 0.01 | 0.01 |
| Other unit corridors | | |
| Washroom corridor | 0.03 (.03) | 0.02 (.02) |
| Utility/linen corridor | 0.03 (.05) | 0.02 (.03) |
| Other unit corridors total | 0.08 | 0.05 |
| Large lounge corridor | 0.02 (.02) | 0.01 (.02) |
| Total (other unit) | 0.23 | 0.10 |
| Common area: | | |
| Entrance | - | 0.00 (.01) |
| Entrance corridor | 0.01 (.02) | 0.03 (.04) |
| Reception desk | - | 0.00 (.01) |
| Hair salon | 0.01 (.02) | 0.02 (.02) |
| Other | 0.01 (.02) | - |
| Total (common area) | 0.03 | 0.05 |
| Missing | 0.02 | - |
| Can't find | 0.00 (.01) | 0.01 (.01) |

Note. Dashes indicate no resident was ever observed in this location. In contrast, a "0" value indicates very few residents were ever observed in this location, resulting in a proportion that is near zero (e.g., 0.00001).

Table 16. Mean proportion and standard deviation (in brackets) of scans residents were observed in locations throughout SCU B (n=11).

| Location | Time 1 | Time 2 |
|---|---|---|
| Own wing: | | |
| Hallway | 0.05 (.05) | 0.04 (.08) |
| Hallway alcove | 0.00 (.01) | 0.00 (.01) |
| Own room | 0.18 (.18) | 0.20 (.21) |
| Exit | - | - |
| Own wing total | 0.23 | 0.25 |
| Other wing: | | |
| Hallway | 0.03 (.04) | 0.02 (.01) |
| Hallway alcove | 0.00 (.01) | 0.00 (.01) |
| Exit | - | - |
| Other wing total | 0.03 | 0.03 |
| Common area corridors: | | |
| Nursing station corridor | 0.1 (.06) | 0.04 (.04) |
| Elevator corridor | 0.03 (.03) | 0.03 (.03) |
| Washroom corridor | 0.04 (.04) | 0.05 (.10) |
| Common area corridors total | 0.17 | 0.12 |
| Day room | 0.31 (.19) | 0.37 (.23) |
| Balcony | 0.05 (.06) | 0.08 (.14) |
| Longhorn lounge | 0.10 (.09) | 0.09 (.09) |
| Nursing station | 0.01 (.01) | 0.00 (.01) |
| Family/quiet room | 0.00 (.01) | 0.01 (.01) |
| Total (common area) | 0.64 | 0.67 |

(continued)

| Location | Time 1 | Time 2 |
|---|---|---|
| Other residents' rooms | 0.05 (.06) | 0.01 (.02) |
| Other | 0.02 (.02) | 0.02 (.04) |
| Off unit | 0.03 (.03) | 0.03 (.02) |

Note. Dashes indicate no resident was ever observed in this location. In contrast, a "0" value indicates very few residents were ever observed in this location, resulting in a proportion that is near zero (e.g., 0.00001).

A comparison of functional locations common to all three centres (e.g., residents' own rooms, other residents' rooms, and corridors) highlights further similarities and differences in use of space. As outlined in Tables 16 and 17, residents of both SCUs were observed in their own rooms for roughly one-fifth of the scans. Thus, SCU residents were observed for smaller proportions of time in their own rooms than MPN residents, who were found in these locations for approximately one-third of the scans. On the other hand, MPN residents spent only one percent of their observed time in other residents' rooms, whereas, in general, SCU residents tended to be observed in other residents' rooms in slightly greater proportions of scans.

MPN residents were observed in the common area corridors and the hallways within the houses for 21% of the scans at time 1 and 15% of the scans at time 2. Similarly, SCU A residents were observed in the entrance corridor as well as the corridors of their own and other units for 16% of the scans and time 1 and 17% of the scans at time 2. SCU B residents were even more similar to the MPN residents in this regard: At time 1, they were observed in the common area corridors and the hallways of their own and other residents' wings for 25% of the scans; at time 2, this figure decreased to 18%.

Along with spending similar proportions of their observed time in the common area corridors of their respective dwellings, MPN and SCU residents were observed in their

respective "gathering" spaces for similar proportions of scans. As Table 14 indicates, MPN residents were observed within their own house living/dining rooms and kitchens for about 30% of the scans. Similarly, Table 15 indicates that at time 1 and time 2, SCU A residents were observed in the dining areas of their own units for approximately one-third of the scans, whereas Table 16 shows that SCU B residents were found in the day room for roughly one-third of the observations, both at time 1 and time 2.

**Participation in A.D.L.s, Daily Chores, Leisure and Other Activities**

**Differences between time 1 and time 2.** The descriptive data provide mixed support for the overall hypothesis that MPN resident engagement in activities would increase over time. As Figure 3 indicates, not only does the proportion of scans in which residents were inactive (i.e., sleeping/dozing, or sitting, standing or lying) account for the greatest proportion of behaviours observed, but this proportion increased from time 1 ($p = .21$) to time 2 ($p = .30$).

On the other hand, Figure 3 indicates there was an increase in the proportion of scans residents were engaged in some type of leisure activity from time 1 to time 2. After leisure activities, walking accounts for the greatest proportion of behaviours observed when residents were active at time 1 and time 2, as outlined in Table 17. Participation in A.D.L.s remained relatively stable over time, while the proportion of scans in which residents were found people-watching decreased. Unlike leisure activities, residents rarely were observed performing daily chores at time 1 ($p = .02$) or time 2 ($p = .01$).

Figure 3. Mean proportion of scans MPN and SCU residents were inactive and engaged in leisure activities.

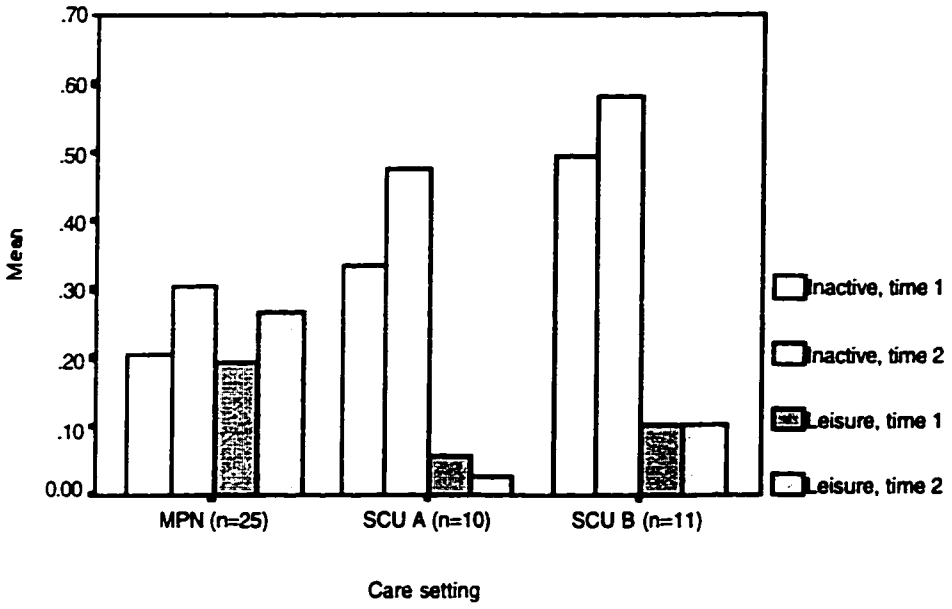


Table 17. Mean proportion and standard deviation (in brackets) of scans residents engaged in various behaviours.

| | MPN (n=25) | | SCU A (n=10) | | SCU B (n=11) | |
|---|---|---|---|---|---|---|
| Behaviour Category | Time 1 | Time 2 | Time 1 | Time 2 | Time 1 | Time 2 |
| Communication | .21 (.14) | .19 (.13) | .11 (.08) | .11 (.14) | .10 (.09) | .11 (.07) |
| A.D.L.s | .08 (.06) | .07 (.03) | .09 (.04) | .10 (.06) | .05 (.03) | .07 (.05) |
| Daily Chores | .02 (.01) | .01 (.01) | - | .00 (.01) | .00 (.01) | .01 (.01) |
| Other Behaviours | .32 (.18) | .24 (.13) | .43 (.17) | .30 (.10) | .26 (.11) | .17 (.16) |
| Socially inapprop. | - | - | - | - | .01 (.01) | - |
| Walk | .16 (.13) | .15 (.12) | .25 (.17) | .20 (.13) | .20 (.09) | .12 (.16) |
| People watch/look out window | .10 (.10) | .04 (.04) | .09 (.08) | .04 (.05) | .02 (.02) | .01 (.03) |
| Other, other | .07 (.07) | .04 (.04) | .09 (.08) | .04 (.08) | .03 (.03) | .03 (.03) |
| Out of facility/off unit | .03 (.08) | .01 (.02) | .01 (.02) | .00 (.01) | .01 (.03) | .01 (.01) |
| Unobservable | .02 (.04) | .01 (.01) | .00 (.01) | .01 (.01) | - | .00 (.01) |

Note. Dashes indicate no resident was ever observed in engaged in this behaviour. In contrast a "0" value indicates very few residents were ever observed engaged in this beahviour, resulting in a proportion that is near zero (e.g., 0.00001).

Statistical analyses of the communication, leisure activities and inactivity data using a repeated-measures MANOVA revealed a significant Care Setting X Time effect, $F$ (3, 42) = 3.39, $p$ = .03. Univariate tests revealed an interaction effect for leisure activities only, $t$ (1, 44) = 9.62, $p$ = .003. As seen in Figure 3, the proportion of scans MPN residents engaged in leisure activities was greater at time 2 than at time 1, whereas SCU residents engaged in leisure activities in a smaller proportion of scans at time 2 than at time 1. The time effect was significant, as well, $F$ (3, 42) = 13.64, $p$ < .000, and univariate

tests indicate leisure activities collapsed across care settings were observed in a greater proportion of scans at time 2 (.18) than at time 1 (.14), $F$ (1, 44) = 4.60, $p$ = .038, as was inactivity (.30 and .41 for time 1 and time 2, respectively), $F$ (1, 44) = 25.39, $p$ < .000.

Walking, people-watching/looking out the window and other behaviours were the dependent variables for the second repeated-measures MANOVA. Only the time effect was significant, $F$ (3, 42) = 8.08, $p$ < .000, and univariate tests reveal people-watching/looking out the window was observed in a smaller proportion of scans at time 2 (.04) than at time 1 (.08), $t$ (1, 44) = 14.60, $p$ < .000.

**Differences between MPN and the SCUs.** As is the case for the MPN behavioural observation data, data collected from the SCUs reveal much variation among residents of both SCUs in the proportion of scans in which they were observed in various activities. Nevertheless, several patterns are evident. As summarized in Figure 3, SCU residents were observed sleeping/dozing or simply sitting, standing or lying for a greater proportion of the scans than MPN residents: At time 1, MPN residents were inactive in about one-fifth of the scans, whereas SCU A residents were inactive for approximately one-third of the scans, and SCU B residents were inactive for as much as one-half of the scans. The proportions of scans in which residents were inactive increased in all three centres, but MPN residents were inactive in a smaller proportion of scans than residents of either SCU: MPN residents were inactive for one-third of the scans, compared to SCU A residents, who were inactive in one-half the scans, and SCU B residents, who were inactive for nearly 60% of the scans.

Consistent with these results is the finding illustrated in Figure 3 that the mean proportion of scans in which residents of MPN were observed in leisure activities is greater than the proportion of scans in which residents of either SCU were. In addition, these differences become more pronounced over time. Although the mean proportion of scans in which residents were observed in a leisure activity increased from .20 at time 1 to nearly .30 at time 2 at MPN, this proportion decreased from .06 to .03 in SCU A and

remained stable at .10 in SCU B.

As shown in Table 17, there was little variation among the centres in the proportion of scans in which residents were observed engaging in A.D.L.s. Residents of each centre were observed in A.D.L.s between five and ten percent of the scans at time 1 and between seven and ten percent at time 2. Behaviours recorded as "other" were observed in only a small proportion of the observed time, as well. These behaviours were observed for less than 10% of the scans in the centres, both at time 1 and time 2. Participation in daily chores and socially inappropriate behaviours were observed in an even smaller proportion of scans than communication, A.D.L.s or "other" behaviours, were. In fact, neither daily chores nor socially inappropriate behaviours were observed in more than two percent of the scans in any of the centres during either data collection period.

At time 1, walking was observed for a smaller proportion of scans at MPN (p=.16) than at SCU A (p=.25) or SCU B (p=.20). This pattern was not repeated at time 2, however. Whereas walking was observed in 20% of the scans at SCU A and in 12% of the scans at SCU B at time 2, this behaviour was observed in MPN in 15% of the scans, falling in between the proportions of scans in which SCU A and SCU B residents were observed walking.

Although people-watching/looking out the window was not observed for more than 10% of the scans in any of the centres, it is noteworthy that at time 1 people-watching/looking out the window in MPN and SCU A were observed in almost five times the proportion of scans as in SCU B. As indicated in Table 17, however, differences among the facilities were attenuated.

Residents were out of the centre or off the unit/wing for only a small proportion of scans. In fact, Table 17 shows that the maximum proportion of scans residents were recorded as off the premises was three. However, examination of the mean proportion of scans individual residents left the centre or were off the unit/wing reveals stark differences

between MPN and SCU residents. During the first data collection period, the greatest proportion of scans any MPN resident was recorded as having left the centre was .28, nearly six time greater than the greatest proportion of scans any SCU A resident left the unit (p=.05), and three times greater than the largest proportion of scans any SCU B resident left the unit (p=.11). By time 2, these differences between MPN and the SCUs were attenuated, with the greatest proportion of scans any resident was recorded as having left the centre or unit at .07.

Using repeated-measures MANOVA procedures with communication, leisure activities and inactivity as the dependent variables, a significant effect of care setting, $F$ (3, 42) = 11.26, $p < .000$, was obtained. Univariate tests reveal a care setting effect for communication, $F$ (1, 44) = 7.78, $p = .008$, leisure activities, $F$ (1, 44) = 29.54, $p < .000$, and inactivity, $F$ (1, 44) = 20.11, $p < .000$. MPN residents communicated (.28) and engaged in leisure activities (.32) in a greater proportion of scans and were inactive (.35) for a smaller proportion of scans than SCU residents (.15, .11 and .67, for communication, leisure activities and inactivity, respectively).

A second repeated-measures MANOVA was conducted with walking, people-watching/looking out the window and other behaviours as the dependent variables. The care setting effect was not significant, $F$ (3, 42) = 1.76, $p = .17$, indicating there were no differences between MPN and the SCUs collapsed across time.

## Participation in Specific Types of Daily Chores and Leisure Activities

**Differences between time 1 and time 2.** Only eight residents were ever observed participating in daily chores during the time 1 and time 2 data collection periods. These residents were observed working in 14 instances at time 1 and in 12 instances at time 2. Due to the paucity of daily chore activities observed, frequencies rather than proportions are reported. At time 1, residents folded clothing/linen for more than half of the 14 instances (eight) of observed daily chore activities. The next most frequently observed daily chore activity was kitchen clean-up, which accounted for three scans,

while making the bed, setting the table and "other" chore activities each accounted for one scan. At time 2, no one daily chore clearly predominated. Kitchen clean-up was observed in four instances, folding clothing/linen in three instances, setting the table and "other" chores in two instances and making the bed in one instance.

There was no one leisure activity that tended to occupy residents' time in MPN. Rather, as Table 18 indicates, at both time 1 and at time 2, residents tended to engage in a wide variety of activities, each of which accounted for relatively small proportions of the scans.

Table 18. Mean proportion and standard deviation (in brackets) of scans residents engaged in leisure activities.

| | MPN (n=25) | | SCU A (n=10) | | SCU B (n=11) | |
|---|---|---|---|---|---|---|
| Leisure Activity | Time 1 | Time 2 | Time 1 | Time 2 | Time 1 | Time 2 |
| Watch tv/movies | .04 (.05) | .06 (.03) | .02 (.03) | .00 (.01) | .02 (.03) | .03 (.05) |
| Read | .02 (.02) | .01 (.03) | .01 (.02) | .00 (.01) | .00 (.01) | - |
| Tea party | .02 (.02) | .02 (.01) | - | - | - | .00 (.01) |
| Bowling | .01 (.01) | .02 (.02) | - | - | - | - |
| Religious ceremony | .01 (.01) | .00 (.01) | - | .01 (.02) | - | - |
| Hairdresser | .01 (.02) | .00 (.01) | .00 (.01) | .01 (.02) | .00 (.01) | .01 (.02) |
| Sing-along | - | - | - | - | .01 (.02) | - |
| Live music | - | .02 (.02) | - | .00 (.01) | .02 (.02) | .01 (.01) |
| Play cards | .01 (.01) | .01 (.02) | - | - | - | - |
| Ball toss | .01 (.01) | .02 (.01) | - | - | .02 (.03) | - |
| Bingo | .01 (.02) | .02 (.01) | - | - | .00 (.01) | - |
| Snack time | .00 (.01) | .04 (.03) | .01 (.02) | - | .01 (.02) | .03 (.02) |

(continued)

| | MPN (n=25) | | SCU A (n=10) | | SCU B (n=11) | |
|---|---|---|---|---|---|---|
| Leisure Activity | Time 1 | Time 2 | Time 1 | Time 2 | Time 1 | Time 2 |
| Exercise class | .00 (.00) | .01 (.01) | - | - | - | - |
| Other leisure | .04 (.04) | .05 (.04) | - | - | .00 (.01) | .01 (.02) |
| Total | .19 (.05) | .27 (.07) | .06 (.05) | .03 (.04) | .10 (.06) | .10 (.07) |

Note. Dashes indicate no resident was ever observed engaged in this behaviour. In contrast a "0" value indicates very few residents were ever observed engaged in this behaviour, resulting in a proportion that is near zero(e.g., 0.00001).

**Differences between MPN and the SCUs.** In SCU A, only one resident was observed participating in daily chores at time 1 or time 2; in SCU B, no residents were observed participating in daily chores at time 1, and only one resident was observed doing so at time 2. Of the three instances residents in the SCUs were observed participating in daily chores, they were making the bed once and engaging in some "other" work activity (e.g., moving furniture) twice. These findings contrast with those of MPN, in which eight residents were observed participating in daily chores for a total of 26 instances over the two data collection periods.

As summarized in Table 18, SCU residents not only were observed participating in leisure activities for smaller proportions of scans than residents of MPN, but they were observed participating in smaller varieties of activities as well. Unlike MPN residents, residents of SCU A were never observed attending tea parties, bowling, participating in a sing-a-long, playing cards or exercising, nor were SCU B residents ever observed bowling, attending a religious ceremony, playing cards or exercising.

## Resident Communication

**Differences between time 1 and time 2.** In this section, communication includes those instances in which it occurred as the sole activity observed as well as with

another activity, such as a tea party. It includes not only verbal communication, but other forms of communication as well, such as listening to someone else talk or holding hands. It is interesting to note that despite the broad nature of the definition, MPN residents were observed communicating for only one-fifth of the scans, both at time 1 (p=.19) and time 2 (p=.21).

**Differences between MPN and the SCUs.** Table 17 shows that during both data collection periods, MPN residents were observed communicating in approximately one-fifth of the scans, twice the proportion of scans residents of either SCU A or SCU B were.

**Presence of Others**

Certain conditions were necessary for the presence of someone else to be recorded during observations of the residents. As indicated in Appendix C, the presence of others was recorded if and only if the other person(s) was(were) in the same functional areas as the resident being observed *and* he/she (they) was(were) participating in the activity as well. Thus, if the other person(s) was(were) in close proximity to the resident observed, but not involved in the same activity, then the presence of the other person(s) was(were) not recorded.

To enhance the interpretability of the findings, the total proportion of scans in which various people (i.e., other residents, staff, visitors) were present includes not only the proportion of scans in which they were the only other people present, but also the proportion of scans in which they *and others* were present. To illustrate, suppose that in 20% of a resident's scans, staff members were the only other persons recorded as present. In addition, suppose both staff and visitors were recorded as present in another five percent of the scans. The total proportion of scans in which staff were present would be .25, the sum of .20 and .05.

**Differences between time 1 and time 2.** Overall, the proportions of scans MPN residents were observed alone or with others differed very little between time 1 and

time 2. During both data collection periods, residents were observed alone for slightly more than half the scans (p=.61 and p=.60 at times 1 and 2, respectively). They were observed participating in activities or engaging in behaviours with at least one other resident for half the proportion of scans (p=.28 at time 1 and p=.29 at time 2) they were observed alone. At least one staff member was present for 14% of the scans at time 1, and at time 2 this figure increased slightly to 19%. The proportion of scans visitors were observed with residents remained stable at seven percent at time 1 and time 2.

Examination of the differences between time 1 and time 2 in the proportions of scans residents were observed with other residents, staff and visitors revealed no statistically significant differences, indicating there was no difference between time 1 and time 2 in the proportions of scans other residents, staff and visitors were present.

**Differences between MPN and the SCUs.** A preliminary examination of the data regarding with whom residents were observed participating in activities reveals residents of all three centres were alone for a majority of the time 1 and time 2 scans, as indicated in Table 19.

Table 19. Mean proportion and standard deviation (in brackets) of scans residents were observed alone and with others.

| | MPN (n=25) | | SCU A (n=10) | | SCU B (n=11) | |
|---|---|---|---|---|---|---|
| Present | Time 1 | Time 2 | Time 1 | Time 2 | Time 1 | Time 2 |
| No one | .61 (.17) | .60 (.19) | .66 (.14) | .66 (.13) | .58 (.12) | .55 (.13) |
| Resident(s) | .28 (.17) | .29 (.16) | .29 (.14) | .28 (.11) | .36 (.10) | .40 (.13) |
| Staff | .14 (.07) | .19 (.10) | .07 (.05) | .06 (.04) | .07 (.05) | .10 (.04) |
| Visitor(s) | .07 (.05) | .07 (.05) | .01 (.02) | .00 (.01) | .02 (.01) | .02 (.03) |

MPN residents were observed with at least one staff member for greater proportions of scans than residents of either SCU, both at time 1 and time 2. In fact, the proportion of scans in which MPN residents were observed with staff was double the proportion of scans SCU A and SCU B residents were observed with staff. At time 2 this proportion increased to .19 in MPN, tripling that of SCU A and doubling that of SCU B. Even more pronounced differences emerge between MPN and the SCUs when observations during A.D.L.s are removed and the remaining data are examined (that is, the denominator is altered to exclude scans when residents were involved in A.D.L.s). Eliminating scans in which residents were observed engaging in A.D.L.s had little effect on the proportion of scans in which staff were engaged in an activity with MPN residents, both at time 1 (p=.13, SD =.07) and time 2 (p=.19, SD =.10). However, at time 1 residents of SCU A were observed engaged in an activity with at least one staff member for only one quarter (p=.03, SD=.04) of the scans that MPN residents were. Similarly, residents of SCU B were observed in an activity with one or more staff members approximately one third (p=.05, SD=.05) of the scans that MPN residents were. At time 2, the differences between MPN and SCU A increased, with SCU A residents rarely observed engaging in an activity with staff members (p=.01, SD=.02). Differences between MPN and SCU B remained stable, with SCU B residents observed with staff members in one-third of the scans (p=.06, SD=.04) that MPN residents were.

The presence of visitors also differed between MPN and the SCUs. Visitors were observed for slightly less than 10% of the scans at MPN at time 1 and time 2. However, visitors were present in less than two percent of the scans in both SCUs at time 1 and time 2.

At time 1, MPN residents were observed with staff for a greater proportion of scans (.14) than SCU residents were (.07), U = -2.8868, p = .0039. In addition, at time 1 MPN residents were observed with visitors for a greater proportion of scans than SCU residents were (.02), U = -3.9100, p = .0001. Similar findings were obtained for the time 2

data. Specifically, MPN residents were observed with staff (.19) and visitors (.07) for greater proportions of scans than were SCU residents (.08 and .01 for staff and visitors, respectively), U = -3.3557, p = .0008 and U = -4.5889, p < .0000.

**Presence of Others During Specific Activities**

**A.D.L.s.**

**Differences between time 1 and time 2.** When MPN residents were observed engaging in A.D.L.s at time 1, they were alone for approximately two-thirds of the scans (p=.69). At time 2, however, the proportion of scans in which residents were alone decreased to less than one-half of the scans (p=.42). In addition, the proportion of scans in which at least one visitor was present decreased from four percent at time 1 to two percent at time 2. On the other hand, the proportion of scans in which at least one other resident was present increased from time 1 (p=.22) to time 2 (p=.32), as did the proportion of scans in which at least one staff member was present (p=.17 at time 1 and p=.25 at time 2).

**Differences between MPN and the SCUs.** As outlined in Table 20, MPN residents were alone during A.D.L.s for a much greater proportion of scans than residents of either SCU, both at time 1 and time 2. In addition, when MPN residents were observed in A.D.L.s, at least one staff member was present for a smaller proportion of time 1 and time 2 scans than at either SCU. In contrast, at least one resident was present during a greater proportion of scans at SCU A than at either MPN or SCU B, particularly during the time 1 observations.

Table 20. Mean proportion and standard deviation (in brackets) of scans residents were observed alone and with others during Activities of Daily Living (A.D.L.s).

| | MPN (n=25) | | SCU A (n=10) | | SCU B (n=11) | |
|---|---|---|---|---|---|---|
| Present | Time 1 | Time 2 | Time 1 | Time 2 | Time 1 | Time 2 |
| No one | .69 (.31) | .42 (.38) | .19 (.15) | .29 (.24) | .27 (.30) | .28 (.30) |
| Resident(s) | .22 (.28) | .32 (.40) | .64 (.24) | .49 (.33) | .14 (.24) | .37 (.28) |
| Staff | .17 (.21) | .25 (.35) | .42 (.19) | .43 (.30) | .67 (.38) | .60 (.34) |
| Visitor(s) | .04 (.08) | .02 (.10) | .03 (.08) | .01 (.04) | - | - |

**Daily Chores.**

**Differences between time 1 and time 2.** Overall, there was little difference between time 1 and time 2 regarding with whom residents engaged in daily chores. During both observation periods, residents were alone in seven instances. In addition, residents were observed participating in daily chores with at least one other resident in six instances at time 1 and four instances at time 2. As well, residents were with staff members in two instances at time 1 and one instance at time 2.

**Differences between MPN and the SCUs.** In the three instances SCU residents were observed participating in daily chores, they were alone. These findings contrast with those of MPN, in which about half (14/26) of the observed instances of chore activity residents were alone. At least one other resident was present in a little more than one-third (10/26) of the observed instances of chore activities, and at least one staff member was present in roughly one-fifth (5/26) of the cases.

**Leisure activities.**

**Differences between time 1 and time 2.** Differences between time 1 and time 2 in with whom MPN residents participated in leisure activities can be summarized as follows: The proportion of scans in which residents were with at least one staff member

was greater at time 2 (p=.57) than at time 1 (p=.48). Conversely, the proportion of scans in which residents participated in leisure activities alone, with at least one other resident, visitor, or other person (e.g., volunteer) was smaller at time 2 than at time 1. At time 1, residents were observed alone for approximately one-fifth of the scans (p=.19), with at least one other resident for nearly three-quarters of the scans (p=.72), with at least one visitor for approximately one-third of the scans (p=.36) and with other people in a little more than one-tenth of the scans (p=.13). At time 2, residents participated in leisure activities alone in 14% of the scans, with other residents in 65% of the scans, with at least one visitor in 27% of the scans, and with other people in only three percent of the scans.

**Differences between MPN and the SCUs.** In SCU A, only five residents were observed participating in leisure activities during both data collection periods, for a total of 21 instances at time 1 and only 12 instances at time 2. Therefore, frequencies, rather than proportions, in which SCU A residents participated in leisure activities alone or with others is reported. A comparison of Tables 22 and 23 reveals that, in all three centres, residents were observed participating in leisure activities with other residents in greater proportions of scans than with anyone else. Residents of all three centres were also observed participating in leisure activities with staff, though for smaller proportions of scans than with other residents. On the other hand, MPN residents differ from SCU residents in the proportions of scans in which they were observed participating in leisure activities with visitors. At time 1 and time 2, visitors were present for roughly one-third of the scans in which leisure activities were observed in MPN, but hardly ever during observed leisure activities in the SCUs. The reader should note that differences exist between MPN and the SCUs in the proportions of scans in which residents were taken off the unit for leisure activities, as indicated in Tables 21 and 22. It is possible that the differences between MPN and the SCUs in the proportion of scans in which at least one visitor or one "other" person (e.g., volunteer) was present would be attenuated if the persons with whom SCU

residents left the unit had been recorded.

Table 21. Mean proportion and standard deviation (in brackets) of scans MPN and SCU B residents were observed alone and with others during leisure activities.

| | MPN (n=25) | | SCU B (n=11) | |
|---|---|---|---|---|
| Present | Time 1 | Time 2 | Time 1 | Time 2 |
| No one | 19 (.22) | .14 (.22) | .17 (.29) | .03 (.08) |
| Resident(s) | .72 (.23) | .65 (.21) | .69 (.31) | .76 (.31) |
| Staff | .48 (.29) | .57 (.19) | .38 (.35) | .54 (.36) |
| Visitor(s) | .36 (.28) | .27 (.20) | .06 (.11) | .02 (.08) |
| Other(s) | .13 (.13) | .03 (.04) | .05 (.07) | - |
| Unknown (off unit or out of building) | - | - | .11 (.21) | .21 (.30) |

Table 22. Frequency of scans SCU A residents were observed alone and with others during leisure activities.

| Present | Time 1 | Time 2 |
|---|---|---|
| No one | 1 | 1 |
| Staff | 5 | 1 |
| Visitor(s) | 2 | 0 |
| Other(s) | 0 | 1 |
| Unknown (off unit or out) | 2 | 8 |

## Communication With Others

**Differences between time 1 and time 2.** During both the time 1 and time 2 data collection periods, communication with at least one other resident was observed for a greater proportion of scans (p=.13 and p=.10, at times 1 and 2, respectively) than communication with at least one staff member (p=.07 for both time 1 and time 2), which, in turn, was observed for a greater proportion of scans than communication with at least one visitor (p=.04 and p=.02).

**Differences between MPN and the SCUs.** The absence of communication among residents was observed in a greater proportion of scans in the SCUs than in MPN. Nevertheless, Table 23 indicates residents of all three centres were observed not communicating for a vast majority of scans, both at time 1 and time 2. Table 23 also indicates that at time 1 MPN residents were observed communicating with at least one other resident for nearly twice the proportion of scans that SCU A residents were, and three times the proportion of scans SCU B residents were, although differences among the centres were attenuated at time 2. In addition, MPN residents were observed communicating with at least one staff member in twice the proportion of scans of either SCU A or SCU B, both at time 1 and time 2. Finally, communication with at least one visitor accounted for small proportions of scans in MPN and the SCUs during both data collection periods.

Table 23. Mean proportion and standard deviation (in brackets) of scans residents were observed communicating with others.

| | MPN (n=25) | | SCU A (n=10) | | SCU B (n=11) | |
|---|---|---|---|---|---|---|
| Present | Time 1 | Time 2 | Time 1 | Time 2 | Time 1 | Time 2 |
| No one | .73 (.14) | .79 (.13) | .87 (.10) | .85 (.17) | .87 (.09) | .86 (.08) |
| Resident(s) | .14 (.12) | .10 (.12) | .07 (.07) | .08 (.13) | .04 (.05) | .06 (.07) |
| Staff | .07 (.05) | .07 (.04) | .03 (.03) | .03 (.03) | .05 (.04) | .03 (.01) |
| Visitor(s) | .04 (.04) | .02 (.02) | .01 (.00) | .02 (.02) | .03 (.05) | .01 (.02) |

## Summary of Findings From Behavioural Observations Conducted at MPN

The results of the behavioural observations conducted at time 1 and time 2 at MPN can be summarized as follows:

- At both time 1 and time 2, MPN residents were found in their own houses for roughly two-thirds of the scans, and in the common areas for the remaining one-third of the scans.
- When residents were observed occupying the common areas, they tended to be located in the common area corridors or the great room.
- Couples living in MPN were observed in their own rooms for greater proportions of scans and in the common areas for smaller proportions of scans than residents not living with their spouses.
- Residents were engaged in leisure activities for roughly equal proportions of scans they were inactive (sleeping/dozing, or sitting, standing or lying), both at time 1 and time 2.
- Residents were observed both inactive and engaged in leisure activities for greater proportions of scans at time 2 than at time 1.
- At time 1, both MPN couples were observed participating in a smaller variety of leisure activities than residents not living with their spouses; however, at time 2, couple 1 became more similar to the other residents in their repertoire of leisure activities.

• Residents were alone for slightly more than one-half the scans, with other residents for roughly one-third of the scans, and with staff for approximately one-fifth of the scans, both at time 1 and time 2.

• At times 1 and 2, residents were observed communicating for roughly one-fifth of the scans.

• In general, couples were observed communicating for smaller proportions of scans than residents not living with their spouses.

• Residents were observed communicating with other residents and staff in greater proportions of scans than with visitors.

## Summary of Findings From Behavioural Observations Conducted at MPN and the SCUs

Similarities and differences among the three centres are summarized below:

• MPN residents were observed in their own houses for a relatively large proportion of scans, but in other residents' houses for a smaller proportion of time; SCU A residents were observed both in their own and other residents' units; SCU B residents were observed in the central dining space for a large proportion of scans, and only occasionally in their own and other residents' wings.

• Both MPN and SCU A residents were observed in their own houses/units for a majority of the time, whereas SCU B residents were observed in the common spaces for a large proportion of scans.

• Residents of all three centres were observed in their respective "gathering spaces" (own house living/dining room and kitchen, own unit dining area, and day room in MPN, SCU A and SCU B, respectively) for roughly one-third of the scans at time 1 and time 2.

• At time 1 and time 2, MPN residents were inactive for approximately one-third of the scans, in contrast to SCU A and SCU B residents, who were inactive for more than one-half of the scans.

• At time 1, MPN residents participated in leisure activities for greater proportions of scans than SCU A or SCU B residents. Moreover, these differences increased from time 1 to time 2.

• At time 1 and time 2, MPN residents engaged in a greater variety of leisure activities than SCU A or SCU B residents.

• During both data collection periods, MPN residents were observed communicating in approximately one-fifth of the scans, twice the proportion of scans that residents of either SCU A or SCU B were.

• Staff and visitors participated in activities with MPN residents in at least twice the proportion of scans that staff and visitors did with SCU A or SCU B residents.

## CHAPTER 4: DISCUSSION

The purpose of this study was to investigate differences between the time 1 and time 2 assessment periods as well as between MPN and two SCUs in staff knowledge, attitudes, stress and resident behaviours. In the staff questionnaire portion of the study, differences in staff knowledge, attitudes, perceptions and stress were examined over time and between care settings. The investigator found no differences over time or between care settings in knowledge of Alzheimer disease or attitudes. Moreover, scores on the knowledge and attitude questionnaires were favourable for staff working in both MPN and the SCUs. Differences between MPN and SCU staff did emerge, however, in their reported levels of stress. Staff working at MPN reported lower levels of stress than SCU staff, as measured by the patient behaviours, resources and knowledge, and physical care subscales of the Caregiver Stress Inventory (Maas, 1988), as well as the emotional exhaustion subscale of the Maslach Burnout Inventory (Maslach & Jackson, 1981). No differences over time or between the care settings were found, however, in staff absenteeism. Staff turnover rates at MPN and SCU A were roughly 30%, in contrast to SCU B's turnover rate of only 4%. Behavioural observations revealed that, overall, MPN

residents were more active than SCU residents, as measured by their periods of inactivity, participation in leisure activities, and communication with others.

## Limitations

The purpose of this study was to investigate differences between MPN and two SCUs in staff knowledge, attitudes, stress and resident behaviours. To the best of the investigator's knowledge, this study is the first of its kind in Canada. Nevertheless, it contains a number of design and methodological limitations that should be noted.

One of the hallmarks of an experimental design is random assignment of participants to groups (i.e., MPN vs. SCUs) (Cook & Campbell, 1979). Due to practical limitations, however, intact groups of staff and residents were included as participants in this study. Along with the lack of random assignment of staff and residents to the care settings, a variety of differences between MPN and the SCUs exist that could not be controlled by the investigator, such as staff recruitment and training procedures, physical design and programming. As Lawton (1981) argues, in everyday practice treatment environments encompass a wide variety of factors and, therefore, should be evaluated as a complex of elements. The flip-side of this argument, however, is that no cause-and-effect relationships can be established, nor can the specific influence of each factor on the observed differences between staff and residents of MPN and the SCUs be determined. To address this limitation, the investigator provided detailed descriptions of each centre's physical environment, staffing practices, programming and resident admission and discharge criteria, and these differences were taken into consideration in the interpretation of the results.

Another potential limitation is the possibility of a unit age bias. As Sloane et al. (1995) assert, differences between residents and staff of the SCUs and MPN may be a product of the relative newness of MPN, although the effects of this type of bias are unpredictable. When appropriate, the author took the possibility of a unit age bias into account in the discussion of the results. In addition, data were collected six and 12 months

after MPN opened to determine whether differences between MPN and the SCUs at time 1 were present at time 2 as well. However, it is possible that the one-year follow-up period was not long enough for the "newness" effect to dissipate.

In addition, it is possible that an observer bias was present when behavioural observations of residents of MPN and the SCUs were conducted, such that the observers were inclined to record more favourable behaviours when observing MPN residents and less favourable behaviours when observing SCU residents. Another common problem in observation studies is observer drift, in which observers gradually modify how they define behaviours as data collection progresses (Martin & Bateson, 1993). To minimize the possibility of these biases influencing data collection, the investigator developed an ethogram which contains detailed descriptions of the behaviours that were to be recorded. As an additional precaution, throughout the study two observers simultaneously, but independently, observed and recorded behaviours of residents in each centre, and reliabilities between the two observers were calculated. Inter-rater reliabilities were consistently high, indicating that the observers were able to produce similar results when the same residents were observed at the same time. The fact that inter-rater reliabilities were high minimizes the possibility that observer bias or observer drift were present (Donát, 1991; Lehner, 1996).

The question of how to interpret the results of the behavioural observations is a fundamental issue in this investigation. Lehner (1996) asserts that data produced through instantaneous scan sampling are useful as estimates of the percentage of time individuals spend in various activities. As Sackett (1978) and Martin and Bateson (1993) point out, however, short sample intervals (that is, short periods of time between observation sessions), behaviours that last a long time relative to the sample interval, and long periods of time between bouts of these behaviours all contribute toward more accurate estimates of the percent of time individuals engage in behaviours. These factors must be balanced against practical considerations, including the length of time required to complete

observations of all individuals included in the study, observer fatigue and its effect on the reliability of observations, as well as the ethical issues and issues of validity associated with the intrusiveness of frequent observations. In light of these concerns, the investigator chose to conduct observations once per hour. This sample interval of one hour is long relative to the duration of many of the behaviours observed, such as verbal interactions, A.D.L.s, and people-watching/looking out the window. Based on casual observation, the investigator noted these behaviours tended to last for only a few minutes, in contrast to many of the group leisure activities which often lasted for roughly one hour. Thus, the reader is cautioned against interpreting this study's behavioural data as providing exact estimates of the proportions of time in which residents engaged in relatively short-duration behaviours. In fact, the proportions of time reported for these behaviours may be underestimates of the true proportions of time residents engaged in such activities.

Finally, the fact that staff and resident samples were drawn from two SCUs and one care setting based on the residential model limit the generalizability of these findings to other residential and SCU settings. Residential and SCU settings vary in their programming, staff selection and training practices, as well as resident admission and discharge criteria, all of which may produce outcomes very different from the ones reported in this investigation. Thus, the applicability of these findings is limited to settings which resemble the staff, resident and programming characteristics outlined in this report.

## Knowledge

The present study's findings of no change in staff knowledge scores over time, along with no differences in scores between staff working in MPN and the SCUs is largely consistent with the results of other studies in which staff working under different models of care for persons with dementia have been compared. Cleary, Clamon, Price and Shullaw (1988) examined the effects of an experimental unit designed to improve resident care by modifying the physical environment and educating staff and visitors. They found no differences in staff knowledge scores collected three months prior and three months after

the unit's opening. Similarly, Maas et al. (1994) found no statistically significant differences in knowledge scores between staff working on SCUs versus traditional nursing home units.

Not only were there no differences between MPN and SCU staff in knowledge scores, but average knowledge scores of staff from both care settings were high. This finding is surprising given that MPN staff included in this study participated in a six-day training program, whereas many SCU staff initially received a one-day orientation session, and other recently-hired staff received "hands-on" training only. One possible interpretation is that MPN staff benefited from the training program, and SCU staff profited from their substantial experience working with older adults with dementia. The demographic data support this interpretation and indicate over half of the MPN staff worked as paid employees in continuing care for five years or less, while one-quarter had less than one year's experience. In contrast, more than three-quarters of SCU staff indicated they had at least six years experience working in continuing care, and over half had more than 10 years experience. These additional years of experience may have provided SCU staff more opportunity to learn about caring for persons with Alzheimer disease, either "hands-on" and/or though various in-service education programs.

On the other hand, a question arises of whether the Alzheimer Disease Knowledge Test (Dieckmann et al. 1988) and the True-False Test (Knight, 1995) are sensitive measures of the type of knowledge important for delivering quality care in long-term care settings. Although staff who participated in this investigation may be knowledgeable of general facts about Alzheimer's disease, this knowledge does not guarantee they possess the necessary skills for delivering effective care to residents with dementia. The finding that three SCU staff members expressed concern in response to the open-ended questions that not all SCU staff members received adequate training calls into question the assumption that high scores on the knowledge tests necessarily mean staff have been trained adequately.

## Attitudes

Like the knowledge questionnaires, measures of staff attitudes toward older adults in general as well as older adults with dementia did not vary over time or between MPN and SCU staff. Differences in attitudes were anticipated, considering that SCU staff work with more impaired residents than staff from MPN. However, exposure to residents with dementia may not necessarily lead to negative attitudes. In their study of health care personnel, Åström, Waxman, et al. (1991) found psychogeriatric care and somatic long-term care workers had more positive attitudes toward dementia residents than personnel working in acute care or orthopedic care. Similarly, Chandler, Rachal, and Kazelskis (1986) compared attitudes of nursing staff working in a skilled nursing facility to attitudes of staff working in a nursing home that provides skilled and intermediate nursing care. Contrary to their expectations, staff responses to Kogan's (1961) Old People scale did not depend on the level of care staff provided, suggesting that increased resident dependency does not necessarily lead to more negative attitudes toward older adults. However, they did find attitudes varied according to level of nursing, such that Registered Nurses (RNs) had the most positive attitudes, while Nursing Aides (NAs) had the least positive attitudes and Licensed Practical Nurses (LPNs) attitudes fell in between those of the RNs and NAs. This relationship between level of nursing and attitude has been reported elsewhere (Åström, Nilsson, Norberg, & Winblad,1990) and may partially explain why SCU staff attitudes were similar to those of MPN staff. Of the 35 SCU staff who participated in the study at time 1 and time 2, 16 (46%) were either RNs or LPNs, whereas only 1 of 16 (6%) respondents from MPN indicated she was an LPN. Older staff and staff with more experience are reported to have more positive attitudes as well (Hope, 1994; Ingham & Fielding, 1985). In the present study, SCU staff are older than MPN staff, with 9 of the 16 (56%) MPN staff 35 or under, and only 8 out of 35 (23%) SCU staff under 36 years of age. Moreover, SCU staff have more experience working in long-term care than MPN staff, as indicated earlier.

As well, the possibility exists that attitude scores were influenced by a socially desirable response set. In their review of assessment instruments of attitudes toward older adults, Ingham and Fielding (1985) and Thomson (1991) point out that social desirability set biases are problems inherent in such scales. Silverman (1966), for instance, found a relationship between Kogan's (1961) Old People scale and socially desirable response sets. Thus, it is conceivable that staff may have been inclined to provide favourable responses, particularly for items in which socially appropriate responses are obvious, such as disagreement with statements like, "Most old people are irritable, grouchy and unpleasant, " and, "If old people expect to be liked, their first step is to try to get rid of their irritating faults."

Wright (1988) argues that, rather than assessing attitudes toward older adults, investigators should examine staff attitudes toward actual care-giving behaviours, including their willingness to expand efforts toward individualized care and to embrace the rehabilitation potential, as well as reasons for working within specific settings. She proposes that the staff's willingness to expand efforts toward individualized care can be measured by the extent to which they endorse the notion of maximizing resident independence while eschewing task-oriented care.

Staff responses to the open-ended questions reveal differences between MPN and SCU staff in attitudes toward caregiving, and suggest MPN staff may have less medically-oriented views of care than SCU staff. Staff were asked what the day-to-day goals of their long-term care settings are, and more MPN than SCU staff stated maximizing resident independence as a goal, both at time 1 and time 2. Moreover, at both data collection periods, proportionately more SCU than MPN staff said providing for residents' basic needs and making sure residents are well-groomed were part of their day-to-day goals. In contrast, at time 2 proportionately more MPN staff than SCU staff listed spending time with residents and enjoying their company, as well as providing activities and stimulation as part of their caregiving goals. As well, a few SCU, but no MPN staff,

indicated that minimizing aggression and controlling behaviours and pain with medications were part of their day-to-day goals.

To the best of the investigator's knowledge, only one other study has been reported in which researchers assessed long-term care staff's attitudes toward caregiving behaviours. Armstrong-Esther and Browne (1986) examined 118 geriatric ward nurses' attitudes and found nurses' views of care were medically-oriented. Nurses ranked carrying out treatments, such as applying dressings and administering medications, as the most important and enjoyable aim of geriatric care, whereas talking to residents and keeping them socially and mentally active was both the least enjoyable and least important task.

## Stress

In general, MPN staff did not indicate they are experiencing excessive levels of burnout or stress. Scores on the Caregiver Stress Inventory (Maas, 1988) and the Maslach Burnout Inventory (Maslach & Jackson, 1981) remained stable from time 1 to time 2. Moreover, MPN staff reported more favourable scores on the Caregiver Stress Inventory (Maas, 1988) than SCU staff, indicating MPN staff experience less stress associated with resident behaviours, physical care of residents, as well as staff knowledge, abilities and resources. Given the finding that MPN staff reported lower levels of stress on the Caregiver Stress Inventory (Maas, 1988), it is not surprising that they also reported lower levels of burnout than the SCU staff, as indicated by lower scores on the emotional exhaustion scale. Thus, it appears that differences between care settings in their physical design, resources and staff can influence staff stress levels.

The benefits of enhanced settings such as MPN which provide special environmental structures, specialized programming and training for staff who care for residents with dementia have been reported elsewhere. In their comparison of Caregiver Stress Inventory (Maas, 1988) and Maslach Burnout Inventory (Maslach & Jackson, 1981) scores of staff caring for dementia residents on a traditional, integrated unit versus a SCU, Mobily et al. (1992) found the integrated unit staff experienced higher levels of

stress and burnout than SCU staff. SCU staff were given 80 hours of training on the management of Alzheimer disease residents. In addition, the unit was physically designed to accommodate resident behaviours, such as wandering. Similarly, Kuremyr, Kihlgren, Norberg, Åström, and Karlsson (1994) compared burnout levels of staff caring for severely demented residents living in a collective living unit based on the social model of care to those caring for dementia residents in a traditional nursing home, which was based on the task-oriented medical model of care. Staff working in the collective living unit participated in a one-month training program, had regular discussions with the research team regarding caregiving, and were supervised by a social worker. Using the Burnout Measure, data were collected two and a half years after the collective living environment opened and again a year later. Results indicate staff working in the collective living environment experienced lower levels of stress than staff working in the nursing home.

In addition to the enhanced environment of MPN, the role of self-selection may be a factor. Staff working at MPN were self-selected, whereas some SCU staff were assigned or "bumped" to these settings. Although no data are available to determine exactly how many staff chose to work in the SCUs, it is not unreasonable to speculate that staff who did not chose to work with residents with dementia have higher levels of stress and burnout than staff who sought out the opportunity to work with this population. Åström, Nilsson, et al.'s (1991) finding that geriatric care nursing staff with the highest levels of burnout were those who had been assigned to their jobs rather than self-directed supports this possibility.

Another factor which may contribute to the low stress levels at MPN is that the centre is relatively new. Sloane et al. (1995) assert that studies in which new facilities/units are examined may contain a "unit age bias" which can affect resident and staff issues in several ways. For instance, residents of new care settings tend to be higher functioning than residents of more established units, and previous research demonstrates that the prevalence and severity of behavioural problems increase with

severity of dementia (Jackson et al., 1989; Swearer, Drachman, O'Donnell, & Mitchell, 1988; Taft & Cronin-Stubbs, 1995; Teri, Larson, & Reifler, 1988). The possibility that SCU staff are more stressed than MPN staff because of the greater level of impairment of SCU residents is supported by Wilson and Patterson's (1988) study. They compared stress levels of staff working on two dementia units. One of the units was occupied by more severely demented residents than the other unit. The researchers found staff working with the more impaired residents reported higher levels of stress on each of the three Caregiver Stress Inventory (Maas, 1988) subscales than staff working with residents who were less impaired. Thus, as MPN residents deteriorate over time, staff stress may increase. In fact, although there were no statistically significant differences over time, examination of MPN Caregiver Stress Inventory (Maas, 1988) and Maslach Burnout Inventory (Maslach & Jackson, 1981) scores reveal trends toward less favourable scores from time 1 to time 2. Specifically, the patient behaviors subscale scores from the Caregiver Stress Inventory (Maas, 1988), as well as the emotional exhaustion and depersonalization subscale scores from the Maslach Burnout Inventory (Maslach & Jackson, 1981) become less favourable over time for MPN staff. These differences between time 1 and time 2 were not statistically significant, but it is possible that the ability to detect differences over time was restricted by small sample sizes. While standard recommendations for adequate power are typically set at approximately 80% (Portney & Watkins, 1993; Norman & Streiner, 1994; Stevens, 1996), post hoc estimates in this study indicate power was poor and fell well under 50%.

The findings from this study also suggest SCU staff experienced a greater variety of stressors than MPN staff, although staff from both settings indicated they experienced stress from a number of sources. Results of the Caregiver Stress Inventory (Maas, 1988) indicate SCU staff reported more stress than MPN staff in areas associated with resident verbal, physical, emotional and social behaviours, staff knowledge, abilities and resources, as well as inadequate physical care for residents. Staff responses to the

open-ended questions at the end of the questionnaire also reveal staff experienced a variety of stressors, both at time 1 and time 2. When asked what things make it difficult for them to carry out their day-to-day goals and what they do not like about their jobs, both MPN and SCU staff stated resident behaviours and not having enough staff/time to carry out tasks or spend with residents were sources of stress. Along with these stressors they shared in common, MPN and SCU staff experienced stressors unique to their settings. MPN staff revealed management, philosophy of care and policy-related stressors, while SCU staff said they experienced conflicts with family members of the relatives as well as conflicts with other staff. In addition, SCU staff listed a number of stressors not mentioned by MPN staff, including inadequate supplies, residents who should be placed in other settings, and rigid schedules.

The finding that staff experience a variety of stressors is consistent with earlier research. Benjamin and Spector (1990) found staff working in traditional as well as innovative settings for persons with dementia were negatively affected by resident behaviours, facility-related factors, such as lack of training and conflicts in philosophy of care with other staff members, and, to a smaller extent, self-related factors, such as feeling they were underpaid. Of particular interest was the finding that the vast majority of staff from all care settings indicated insufficient staff was a source of stress, even though the innovative setting had more than three times the staffing levels of the other two facilities. Similarly, dementia care staff in Wilson and Patterson's (1988) study identified stressors related to resident behaviours, staff, the organization, and, to a much lesser extent, families.

Of particular interest are how the results of the present investigation parallel the findings of Cohen-Mansfield (1989), who investigated both sources of stress and satisfaction of long-term care staff. As in the present study, the long-term care staff included in Cohen-Mansfield's study identified a variety of stressors, including staffing levels, role performance, and conflicts with co-workers and supervisors. Conversely,

sources of satisfaction tended to focus heavily on interpersonal relations with residents. That is, staff especially enjoyed working with the residents. Also similar to the results of the current study is Cohen-Mansfield's finding that staff reported working with their colleagues is both a source of satisfaction and distress in their jobs.

Interestingly, MPN staff's lower levels of reported stress were not manifested in lower absenteeism and turnover rates than SCU staff. Although MPN's turnover rate of 30% is similar to nursing home staff turnover rates reported elsewhere (Burgio & Bourgeois, 1992), it is high compared to SCU B's turnover rate of four percent. One possible explanation for MPN's comparatively high turnover rate may be the presence of a unit age bias between MPN and the SCUs. Sloane et al. (1995) note that staff turnover rates tend to be higher in care settings employing new staff. In fact, the initial instability in staffing that is characteristic of new facilities is reflected in the reasons MPN staff left: Whereas two out of 22 MPN staff members quit during the course of the study, only one out of the 56 SCU left for the same reason. In addition, of the seven SCU A staff who were absent at time 2, more than half (four) left because they were bumped, a circumstance beyond the staff members' control.

## Resident Activities

### Behavioural Observations

Results of the behavioural observations reveal MPN residents spent roughly one-third of the observed time in their own rooms, both at time 1 and time 2, while SCU residents were observed in their own rooms for roughly one-fifth of the scans. At the time the study was conducted, MPN residents were less functionally and cognitively impaired than the SCU residents, and earlier studies indicate residents with little or no dementia tend to spend more time in their own rooms than more demented residents (Burgio et al., 1994; Milke, Dobbs, Rule, & Milke, 1987; Parris Stephens & Willems, 1979). Whether or not this pattern of behaviour should be discouraged, however, depends, in part, on what the residents did while in these locations (Lawton, 1981). Observations indicate MPN

residents were inactive four times the proportion of any other behaviour. On the other hand, they were inactive less often, and engaged in leisure activities and communication more often than when SCU residents were in their own rooms. Therefore, it is not clear that the increased time MPN residents spent in these spaces should be discouraged.

The behavioural observations also indicate residents tended to congregate within certain areas of each facility. In MPN, the focal areas include the kitchen/living/dining areas within each house, while the central pod areas and the day room were congregation areas for residents of SCU A and SCU B, respectively. Despite distinct differences among the facilities' three floor plans, these areas share one particular feature. MPN staff often work in the kitchen/living/dining areas, while the central pods and the day room of the SCUs provide residents with a view of the nurses' station, as well as the comings and goings of various people. Lawton (1981) has long asserted and research (Hiatt Snyder, 1980; Moos, David, Lemke, & Postle, 1984) affirms that residents tend to congregate in areas of high activity. That is, residents prefer to be "where the action is", and the findings of this study corroborate these assertions.

The notion that residents prefer to congregate in areas of high activity may explain the finding that MPN residents made little use of the activity rooms, even though they contained a variety of recreational materials, including board games, plants and gardening tools, a stereo, a television, an organ, and a shuffleboard. These rooms were often dark and isolated, which may have discouraged residents from using these spaces. Cohen-Mansfield and Werner (1995) found residents avoided poorly lit areas and wandered around areas in which residents were in close proximity to each other, such as the nurses' station.

The presence of others, such as staff and visitors, also may be necessary to facilitate residents' use of recreational materials stored in these rooms. Both McClannahan and Risley (1975) and McCormack and Whitehead (1981) found that simply providing residents with recreational materials in the absence of staff prompting and encouragement

was not sufficient to increase resident engagement in activities. Therefore, it is conceivable that the absence of others to encourage resident use of these spaces and materials may have contributed to the low observed occupancy of these areas. Such an argument may help explain the finding that, in contrast to the lack of use of the small activity rooms, residents were observed in the great room, and their use of this space nearly doubled from time 1 to time 2. Examination of resident behaviours while in the great room indicates residents engaged in group leisure activities in a large majority of the scans. Thus, staff prompting and encouragement may account for the relatively high use of the great room compared to the smaller activity rooms. Perhaps the most striking illustration of the extent to which residents' behaviours can be influenced by the presence of others is provided by the behavioural data of one of the two sets of couples observed. Between the time 1 and time 2 assessments, the spouse of one of the couples died. The surviving spouse then befriended a resident, and by the time 2 assessment, this pair was considered a couple by the staff and family alike. Examination of the surviving spouse's data reveals dramatic increases between time 1 and time 2 in the proportions of scans in which this resident was observed throughout the common areas of MPN and participating in leisure activities with other residents, suggesting the gregarious nature of the new member of this couple produced a concomitant increase in the surviving member's level of participation in social activities.

Researchers such as Wright (1988) argue staff's willingness to maximize residents' independence, interact with residents, encourage residents to participate in activities they find interesting, and minimize the use of restraints are important indicators of quality care. Thus, one of the most intriguing patterns that emerged from the behavioural data is that, overall, MPN residents appeared to be more active than residents of either SCU. MPN residents were inactive for one-fifth of the scans at time 1 and one-third of the scans at time 2, whereas SCU residents were inactive between one-third at time 1 and nearly two-thirds of the scans at time 2. In addition, at time 1 MPN residents were

observed participating in leisure activities for roughly 20% of the scans, whereas SCU residents were observed in these activities for 10% of the scans or less; these differences became more pronounced by time 2, with MPN residents observed participating in leisure activities for nearly 30% of the scans, and SCU residents observed in these activities for only 10% of the scans. Moreover, MPN residents engaged in a wider variety of activities than SCU residents and, overall, they were observed with staff or visitors in at least twice the proportion of scans SCU residents were.

Direct comparisons of these findings with results of other behavioural observation studies are hampered by variations among studies in how behaviours are defined, the types of residents observed, and the care settings in which they reside. These limitations notwithstanding, the activity levels of the SCU residents observed in this study fall within the range reported by other researchers, whereas the activity levels of MPN residents compare favourably with activity levels reported in similar studies. Armstrong-Esther and Browne (1986) for instance, report that hospitalized confused or demented residents engaged in some type of purposeful activities in less than 20% of the observations. Similarly, in Burgio et al.'s (1994) observation of residents with diagnoses of Probable Dementia of the Alzheimer Type or with clinical presentations of dementia, residents did not engage in any activity for as much as 80% of the time they were observed. Moreover, the finding that MPN residents participated in activities more than SCU residents is similar to the findings of Ritchie et al. (1992). They compared traditional long-stay hospital care for elderly persons with dementia to a non-medical communal care alternative called a "cantou", and observed cantou residents participating in group activities more frequently than the hospital residents.

Differences between MPN and SCU resident activity levels were due in large part to the greater number of staff-organized activities observed in MPN compared to the SCUs. Staff responses to the open-ended responses raise the question of whether the

fewer observed instances of staff-initiated activities in SCUs compared to MPN are a product insufficient staffing levels, differences in staff perceptions of their roles as caregivers, or both. When asked what things make it difficult for SCU staff to carry out their day-to-day goals, the most predominant response offered by SCU staff was the lack of staff/time to carry out tasks or to interact with residents. As Karuza and Katz (1991) argue, when long-term care settings are insufficiently staffed, priority is given to addressing basic functional needs rather than psychosocial needs. Moreover, both Lemke and Moos (1989) and Lindesay et al. (1991) found resident participation in activities and staff-resident interactions were greater in long-term care units that had higher staffing levels. Other research, however, suggests increased staff levels alone are not necessarily associated with higher levels of resident engagement. Moos et al. (1984) and Sixsmith, Hawley, et al. (1993) found that more time was devoted to administrative duties and assistance with basic care activities rather than informal staff-resident interaction or resident activities with the introduction of new staff. Others, like Coulson (1993) found the ability of nursing home staff caring for dementia residents to provide flexible care was hampered by their lack of education, staffing patterns, and pressure to complete tasks within a specified time period. Rather than staffing levels per se, then, an essential difference between MPN and SCU staff which may account for differences in observed interactions with residents is that MPN resident companion duties specifically include assisting residents with participation in leisure and recreational activities, while SCU nursing attendant duties do not. On both SCU A and SCU B, resident activities were organized primarily by recreation/occupational therapists at the time this study was conducted. Between the time 1 and time 2 data collection periods, however, these positions were eliminated. The investigator is not aware of any formal changes to the direct care staff's duties that stipulate specifically direct care staff are required to organize resident activities on a regular basis.

Overall, MPN and SCU residents were observed communicating in approximately

one-fifth and one-tenth of the scans, respectively. The behavioural observation method used in this study may be partially responsible for the low proportion of scans in which residents from all three centres were observed communicating. Residents were observed once per hour on the hour, and each resident's behaviour at that moment was recorded. Although this method of data collection permits the investigator to observe a relatively large number of residents, it is insensitive to detecting behaviours that occur relatively infrequently or for very short periods of time because of the low probability that the behaviours will occur precisely at the moment an observation is made (Lehner, 1996; Sackett, 1978). Thus, it is likely that many instances of brief bouts of communication were not captured.

Although communication behaviours were not observed in a large proportion of scans in MPN or the SCUs, it is noteworthy that MPN residents were observed communicating in nearly twice the proportion of scans that SCU residents were. Moreover, MPN residents were observed communicating with staff in nearly two times the proportion of scans that SCU residents were. Again, these findings resemble those of Ritchie et al. (1992), who observed that cantou residents communicated more with staff and visitors than did hospital residents. Researchers argue that staff maintenance attitudes toward caregiving account for low levels of staff-resident communication typically observed in long-term care settings for residents with dementia. Lipman, Slater, and Harris (1979), for instance, observed verbal exchanges of residents sitting in the communal spaces of eight nursing homes. Residents were observed interacting with staff in only nine percent of the exchanges, and these interactions were primarily instrumental in nature. Even more surprising are the findings of Lindesay et al.'s (1991) study. They compared two mental hospital psychogeriatric wards to a ward based on the social model of care, and found that in all three settings, the vast majority of observed staff-resident interactions occurred during transfers. In the present investigation, the bulk of staff-resident communication in the SCUs was observed during A.D.L.s, while communication

between staff and residents in MPN was not restricted to these basic care activities. These differences lend credence to the suggestion that SCU staff interacted with residents less than MPN staff did because they hold more task-oriented attitudes toward care than MPN staff.

In addition, previous research suggests nursing home staff interact with cognitively alert residents more often than with confused residents. Burgener and Shimer (1993), for instance, found that staff caring for older adults in long-term care institutions engaged in less small talk and banter with residents who were confused than residents who were more cognitively alert. Armstrong-Esther, Sandilands, and Miller (1989) also found nursing staff initiated and responded to interactions with confused older adults significantly less often than with more cognitively alert older adults. Thus, the finding that MPN residents communicated more with staff than SCU residents did may be related to the fact that SCU residents were more cognitively impaired than MPN residents.

Along with differences in the residents' level of dementia, differences in design between MPN and the SCUs may have contributed to the smaller proportions of observed communication between SCU staff and residents compared to their MPN counterparts. As noted previously, each care setting contains communal areas where residents gather, namely the kitchen/living/dining areas in MPN, the central dining area in SCU A, and the day room in SCU B. In contrast to the MPN kitchen/living/dining areas, the central dining areas and dayroom of the SCUs are large, open-spaces, with the nurses' stations located along their perimeters. The findings of Lawton, Liebowtiz, and Charon (1970) as well as Moos et al. (1984) highlight the potential impact of such design differences on staff-resident interaction. Both research teams reported decreases in staff-resident interaction in newly-designed units with large central spaces where residents could gather and nurses could monitor resident activities. They attribute these findings to the fact that nurses were provided with unimpeded views of resident activities, which allowed staff to monitor resident behaviours without having to leave the nurses' station,

which, in turn, lead to fewer interactions with residents.

In contrast to leisure activities and communication, neither MPN nor SCU residents were observed engaging in chore activities in more than a handful of observations. The finding that residents of MPN were rarely observed participating in chores is somewhat surprising given that one of the programming goals of MPN is to create a more homelike atmosphere in which residents are encouraged to participate in the everyday activities they typically would do at home. Similar findings were reported by Ritchie et al. (1992) in their comparison of activities of residents living in a cantou to those of long-stay hospital residents. They found neither group spent more than very small portions of their time performing domestic tasks, despite the fact that this activity was highly promoted in the cantou.

It is interesting to note that when chore activities were observed in MPN, the majority of instances occurred either in the residents' rooms or in the house kitchen/living/dining areas. Lawton (1981) argues that, ideally, physical structures should facilitate resident involvement with the environment. These two spaces are particularly "homelike" in appearance, and it is interesting to speculate whether the homelike setting prompts residents to engage in tasks that are typically performed at home.

Neither MPN nor SCU residents were observed engaging in socially inappropriate behaviours. Previous research also indicates socially inappropriate behaviours such as agitation and aggression occur most often during personal care activities such as toileting (Bridges-Parlet, Knopman, & Thompson, 1994; Gilley, Wilson, Beckett, & Evans, 1996). To minimize the obtrusiveness of observations, residents were not observed when they were engaged in these personal care activities. For this reason, incidents of socially inappropriate behaviours in MPN and SCUs may be under-reported.

When SCU residents were active, walking was observed for the greatest proportion of scans of all activities; in MPN, walking accounted for the greatest proportion of scans when residents were awake and alert, after participation in leisure activities.

These findings are not surprising, given the vast amount of literature indicating walking is a commonly observed activity in persons with Alzheimer disease (Deutsch & Rovner, 1991; Gurwitz, Sanchez-Cross, Eckler, & Matulis, 1994; Rabins, Mace, & Lucas, 1982; Rosin, 1977). The finding that much of the walking observed in all three facilities occurred in the corridors where open spaces are provided is also consistent with research reported elsewhere (Cohen-Mansfield, Werner, Marx, & Freedman, 1991; Rosswurm, Zimmerman, Schwartz-Fulton, & Norman, 1986). Of particular interest is the observation that SCU residents took advantage of their unrestricted access to the corridors of both their own and other residents' units/wings located within the secured areas. MPN residents, on the other hand, appeared to prefer walking in their own houses rather than other residents' houses or the common area corridors. It is possible that the less impaired MPN residents were more attracted to the familiarity and the high levels of activity of their own houses than the more severely demented SCU residents were to their own units/wings. Similar arguments are posed by Rosswurm et al. (1986) in their pre- post-intervention study in which they converted a large dining room located in a nursing home unit to an activity-dining room. Based on nurses' spot-check observations, they report increased walking in the newly-renovated area by residents with Alzheimer disease, and attribute this effect to its enhanced home-like appearance and opportunities for stimulating activities.

**Medications and Physical Restraints**

Medications and physical restraints comprised part of the care delivered in MPN and the SCUs. In MPN, 41% of the residents at time 1 and 46% of the residents at time 2 received psychotropics, whereas in the SCUs, 55% of the residents at time 1 and 65% of the residents at time 2 took at least one drug. Like the behavioural observation studies, differences in methods across studies complicates comparisons of psychotropic and physical restraint use in the present investigation with those of previous studies. In general, however, use of medications and physical restraints reported in this study are within the range reported in other studies (King, Ellis, & McCann, 1991; Rovner, German,

Burton, & Clark, 1994; Rovner, Steele, Shmuely, & Folstein, 1996; Snowdon, 1993; Werner, Cohen-Mansfield, Farley, Segal, & Lipson, 1994).

Medication and physical restraint use in MPN provide mixed support for the residential care program. Contrary to what was hypothesized, medication use did not decrease between time 1 and time 2. On the other hand, MPN remained free of physical restraints without greater use of psychotropics than in the SCUs. MPN's policy against use of physical restraints coupled with an absence of high medication use is consistent with previous research which demonstrates that staff working in facilities with no physical restraint policies do not rely more heavily on psychotropics in their day-to-day care than facilities in which physical restraints are permitted (Castle & Fogel, 1998; Werner, Cohen-Mansfield, et al., 1994). In addition, others report favourable results for settings based on the social model of care when psychotropic drug use in these settings is compared to use in more medically-oriented dementia care settings. Annerstedt (1994) reported more restricted use of neuroleptics and anti-anxiety agents in group living units for residents with Alzheimer or vascular dementia than in traditional institutional settings for a matched sample of residents. In Ritchie et al.'s (1992) comparison of medication use in traditional long-stay hospitals to that in the "cantou", however, the mean number of prescribed psychotropic medications was higher at the cantou (1.37) than at the hospital (.99). Although this small difference reached statistical significance, the authors attribute this finding to differences in physicians' prescribing habits, rather than attributing them any clinical significance.

The success of MPN in its ability to remain restraint-free without greater use of psychotropics than in the SCUs may be due, in part, to differences in the residents' severity of dementia between MPN and the SCUs. As indicated by scores on the MMSE (Folstein & Folstein, 1975) and the FAM (Hall et al., 1993), MPN residents were far less functionally and cognitively impaired than their SCU counterparts, and previous research indicates severity of dementia is associated with greater use of pharmacological and

physical restraints (Burton, German, & Rovner, 1992; Castle & Fogel, 1998; Evans & Strumpf, 1989; Rovner et al., 1994; Sloane et al., 1991).

Given that SCU staff frequently expressed concern in their responses to the open-ended questions that they were understaffed, it is tempting to conclude that they relied on pharmaceuticals and physical restraints more than MPN staff because of insufficient staffing. This interpretation is supported by Sloane et al. (1991), who found restraint use was associated with staff-residents ratios. However, a number of other researchers report no relationship between restraint use and staffing levels. (Castle & Fogel, 1998; Magee et al., 1993; Tinetti, Liu, Marottoli, Ginter , 1991; Werner, Cohen-Mansfield, et al., 1994). Rather than staffing levels per se, staff training and education may be more relevant in minimizing the use of pharmaceuticals and physical restraints. There is evidence to suggest less well-trained long-term care staff have less favourable views on restraint and pharmaceutical use than better trained staff (Hill & Schirm, 1996), and studies of intervention programs aimed at reducing the use of restraints indicate training in specific alternatives, such as changes in care routines and the introduction of activities are essential (Mort, Singh, Gaspar, Adams, & Singh, 1993; Sundel & Horn, 1994; Werner, Koroknay, et al., 1994). In response to the open-ended questions, SCU staff indicated they had serious reservations about the adequacy of training of staff, and both MPN and SCU staff indicated they would benefit from classroom training on behavioural management techniques, implementing therapeutic activities and general information regarding Alzheimer disease. The finding that MPN expressed interest in additional training may explain why medication use did not decrease over the two assessment periods.

In contrast to MPN in which physical restraints were not used at time 1 or time 2, restraints figured prominently in the SCUs: Sixty-seven percent of residents at time 1 and 89% of residents at time 2 were restrained at least once in SCU A , and 37% of residents at time 1 and 54% of residents at time 2 were restrained at least once in SCU B. These

figures are high relative to what others have reported. In their study of restraint use in extended care and nursing homes, Magee et al. (1993) reported 32% of the residents had been physically restrained at least once. However, the researchers did not include geriatric chairs and side rails as physical restraints. Moreover, they included residents with and without dementia diagnoses in their sample; use of physical restraints is related to cognitive status, with higher use of restraints in cognitively impaired than cognitively alert residents (Burton, German, Rovner, & Brant, 1992; Karlsson, Bucht, Eriksson, & Sandman,1996; Sloane et al., 1991; Tinetti et al., 1991). Tinetti et al. (1991) defined physical restraints more broadly and reported 66% of residents had been restrained. However, like Magee et al. (1993), their sample was not restricted to cognitively impaired residents. Conversely, both Sloane et al. (1991) and Karlsson et al. (1996), restricted their studies of restraint use to the care of residents with dementia and both research teams reported small percentages of residents who were restrained: Karlsson et al. (1996) found 36% of cognitively impaired residents had been restrained at least once, whereas Sloane et al. (1991) reported half that percentage (18%) of residents had been restrained. However, in both studies, a more restrictive definition was used than in the present study, with Karlsson et al. (1996) excluding bed rails and Sloane et al. (1991) excluding all residents who were in bed.

The differences between SCUs in their use of physical restraints was an unexpected finding. Examination of MMSE (Folstein & Folstein, 1975) and FAM (Hall et al., 1993) scores of the SCU residents revealed that, although there were no statistically significant differences, SCU A residents had lower MMSE and FAM scores than SCU B residents. As noted earlier, previous research has demonstrated physical restraint use is higher among more impaired residents (Burton et al., 1992). Thus, differences between SCUs in restraint use may be a product of differences in residents' severity of dementia.

In the SCUs, physical restraints were used primarily to assist with A.D.L.s, to permit residents to rest, and for "other" reasons. The use of restraints during A.D.L.s is not

surprising, given the residents' relatively high level of functional impairment. In contrast, reasons of "rest" and "other" are more difficult to interpret because of their ambiguous meanings. On the one hand, it is conceivable that staff felt these residents were at risk of falling. Several other investigators report that prevention of falls or injury is the primary reason residents are restrained (Magee et al. 1993; Sloane et al., 1991; Sundel, Garrett, & Horn, 1994; Werner, Koroknay, Braun, & Cohen-Mansfield, 1994). On the other hand, the reasons of "rest" and "other" also could suggest restraints were used as avenues for managing disruptive behaviour. Use of physical restraints to curb disruptive behaviour contradicts the findings of Sloane et al. (1991), who examined restraint use in dementia care and found physical restraints were used to minimize the risk of falls, whereas pharmaceuticals were used to manage behaviour. Karlsson et al. (1996), however, examined differences between restrained and unrestrained cognitively impaired residents, and found not only that the restrained residents were more impaired in A.D.L. functioning and walking ability, but also were more disruptive and judged by staff as imposing a heavier psychological workload than the residents who were not restrained. Thus, the authors argue, physical restraints were likely used to control behaviour.

## Conclusions

The main purpose of this study was to assess differences in staff attributes and perceptions, as well as resident activity involvement between MPN, a centre based on the social model of care, and two SCUs. Despite the limitations of this study, the results of this investigation contribute to the emerging body of literature on the social model of care by going beyond reliance on its intuitive appeal and anecdotal reports to provide empirical evidence of its effectiveness. This research also addresses the need for in-depth research on staff experiences in different care settings for persons with dementia. In addition, to the best of the investigator's knowledge there are no other studies that have been reported in which the experiences of married couples are compared to those of residents not living with their spouses in long-term care settings. Only two couples were

observed in this study, so no firm conclusions regarding differences between co-habitating married couples and couples living apart can be made. Nevertheless, this study's finding that married couples appeared to prefer limited interactions with other residents confirms anecdotal reports of caregivers working in long-term care settings, and is worthy of further investigation to determine if these same patterns emerge in studies with larger sample sizes.

A comparison of the residential model of care espoused in MPN to the more traditional model of care of the SCUs revealed several noteworthy similarities and differences. One cautionary note raised by gerontologists interested in long-term care is that staff working in settings based on the residential model of care will experience high levels of stress and burnout (Hoglund et al., 1994; Johansson, 1990). The findings of this study do not support this hypothesis, as evidenced by MPN staff's favourable scores on the stress and burnout questionnaires, coupled with turnover and absenteeism rates that were similar to those of the SCU staff.

Analysis of the questionnaire data indicate the residential model produces no distinct advantage over the SCUs with respect to staff knowledge of Alzheimer's disease or their attitudes toward residents. In fact, staff from both MPN and the SCUs scored favourably with respect to both areas. However, knowledge of facts on Alzheimer's disease is no guarantee that staff are sufficiently trained with regard to actual caregiving behaviours. Despite obtaining high scores on the knowledge questionnaires, MPN and SCU staff indicated in their responses to the open-ended questions at time 1 and time 2 that they would like additional training specifically in behavioural management. Moreover, a small number of SCU staff expressed concern that other staff members have not been trained sufficiently.

Similarly, the favourable attitudes of staff toward older adults and dementia residents do not translate necessarily into a greater propensity of staff to interact with residents. Although both MPN and SCU staff scored positively on the attitude

questionnaires, MPN residents were observed communicating with staff in nearly twice the proportion of scans that SCU residents were. Moreover, the majority of observed staff-resident interactions in the SCUs were observed during A.D.L.s, whereas staff-resident interactions in MPN were not restricted to these basic care activities. In addition, one of the most striking differences that emerge from observations of the residents was the higher activity levels of MPN residents compared to SCU residents. Examination of the kinds of activities residents engaged in indicates the greater propensity of MPN residents to engage in leisure activities was due in large part to the greater number of activities organized by MPN staff compared to their SCU counterparts. That is, MPN residents were not more active simply because they are less severely demented and, therefore, more inclined to spontaneously engage in activities than SCU residents. Rather, these findings as well as previous research (McCormack & Whitehead, 1981; Moos, David, Lemke, & Postle, 1984; Moos & Lemke, 1989; Rovner et al., 1996) highlight the critical role of staff in maximizing residents' engagement in their surroundings by organizing and encouraging residents to participate in activities. In addition, these findings, in conjunction with staff responses to the open-ended questions regarding their caregiving goals, indicate SCU staff hold more task-oriented attitudes toward caregiving than staff working within the residential model of care espoused in MPN.

Nevertheless, it is important to note that MPN and the SCUs differed with regard to the residents living in these settings. Overall, MPN residents were less functionally and cognitively impaired than the SCU residents, which may explain, at least partially, some of the reported differences in staff-resident interactions between MPN and the SCUs. That is, SCU staff may engage in more task-oriented behaviour than MPN staff because the residents of SCUs are more impaired and have more medically oriented needs than MPN residents. As others (Ritchie et al., 1992) have noted, research is required which addresses the question of whether the social model of care can be applied successfully to all levels of dementia. The findings from a handful of studies suggest care settings based

on the social model can have positive outcomes for persons in the early stages of dementia, as well as for formal and informal caregivers. What is less clear is whether this model of care would produce similar positive outcomes in the care of more severely demented residents, who may require more medically-oriented interventions than their less demented counterparts. Caregivers would face the difficult task of providing care that is rooted in the social model while providing medical interventions when appropriate. Moreover, little attention has been paid to the development of therapeutic activities for severely demented individuals (Lawton, Moss, & Duhamel, 1995; Rabinovich & Cohen-Mansfield, 1992; Rovner et al. ,1994; Wimo, Nelvig, Adolfsson, Mattson, & Sandman, 1993). Thus, research on psychosocial interventions that are meaningful (i.e., stimulating, but not overwhelming) to residents in the later stages of dementia is much-needed in order for the social model of care to be applied successfully.

In sum, the findings that MPN staff appear to have fewer task-oriented attitudes, reported less stress, had absenteeism and turnover rates no higher than those of SCUs, in conjunction with the observation that MPN residents were more active than their SCU counterparts indicates that MPN's residential model of care produces favourable results for both staff and residents. Additional research is required, however, to substantiate the findings of this study that an enhanced therapeutic environment is beneficial to both staff and residents. Although in applied research it is not possible to establish the level of control characteristic of experimental designs, it is realistic to expect future studies to address some of the methodological limitations of the studies conducted thus far. For example, "control" and "treatment" groups of residents could be matched according to their levels of cognitive and functional impairment, and observations of resident behaviours could be conducted by trained observers who are unaware of the study hypothesis. Furthermore, current research on the social model of care is limited because, to date, investigators have examined the effects of multiple, simultaneous interventions, creating what Sloane and Barrick (1996) have dubbed the "therapeutic 'black box'". Thus,

additional research is required to discern which components of the social model are responsible for the positive outcomes documented thus far.

## Implications

Staff responses to the questionnaires suggest additional staff training should be considered for both SCU and MPN staff. Many of the SCU staff expressed concern about having received little or no training to work on the unit, with some SCU staff initially receiving a one-day orientation session, and other recently-hired staff receiving "hands-on" training only. In contrast, all MPN included in the study participated in a six-day training program prior to the opening of the centre. The investigator noted that when several of the MPN staff were completing their questionnaires, they commented that, although the initial training they received before MPN opened was essential, they wished they could repeat the training they initially received, after having had experience working with demented older adults. These experiences, they suggested, would make the information they initially received more meaningful than receiving the information in the absence of prior experience. Comments from both the SCU and MPN staff support Benner's (1984) conceptual model of clinical skill performance in which he argues that the dynamic between experience and training may be critical to the success of staff training programs. In sum, he argues that staff expertise develops out of the ability to combine experiences and training, so that each component reshapes and refocuses the other. The implication of this model is that both MPN and SCU staff require additional training, but for different reasons. Although MPN staff attended a training program, the information they received occurred prior to the opening of MPN, restricting their opportunity to translate the information into meaningful clinical tools. Moreover, Burgio and Burgio (1990) caution in their review of training methods in long-term care that staff training programs do not often lead to permanent changes, and regular, periodic education classes are required to ensure that the benefits of training do not dissipate. Conversely, SCU staff are far more experienced than MPN staff, but have received little formal training which may positively

influence their daily caregiving behaviours.

Given the prominent role psychotropics and physical restraints played in care delivery in the SCUs, special attention should be directed toward education in this area. Similarly, continuing education of MPN staff may maximize the likelihood that MPN will remain restraint-free and make minimum use of chemical restraints. In addition, training programs for SCU staff should specifically target communication and conflict management among staff, as indicated by the fact that several SCU staff indicated staff conflicts were a source of stress. Like Cohen-Mansfield's (1989) investigation of sources of stress and satisfaction among long-term care personnel, the findings of the present study highlight the value of resolving these staff conflicts given that, in both cases, staff also identified teamwork as an important source of satisfaction.

A small number of MPN staff expressed concern over conflicts in policies and drift from the centre's philosophy of care, suggesting staff may find it difficult translating the philosophy of care into everyday care practices. Although MPN staff received instruction on this topic when the centre opened, additional training may be required to minimize drift from the centre's philosophy of care. The value of instruction in this area has been noted by Baltes, Neumann and Zank (1994), who report staff profited the most from the practice-oriented components of a staff training program, and that staff particularly favoured the portion of the program that focused on transferring knowledge to day-to-day care practices.

In all three facilities, residents tended to congregate in areas of high activity. People-watching/looking out the window have been recognized as activities long-term care residents appear to enjoy (Hiatt Snyder, 1980; Lawton, 1981), both alone and with others. Therefore, seating should be made available which permits residents to congregate and observe the activities within busy areas of the centres. Curiously, residents of SCU A were observed in the side lounges for only a small proportion of time, despite the views of the central pod areas provided from these locations. The

arrangement of chairs in a sociofugal manner, the provision of materials residents find interesting, and staff prompting to encourage use of these spaces may increase resident use of these areas.

Another important finding that emerged from the results of this study concerns individual differences in the residents' behaviours. Within each site, the variability among residents in which they were observed in various locations (e.g., own room vs. common spaces) and participating in various activities (e.g., walking, people-watching, and organized group activities) indicates residents have divergent interests. These intraindividual differences suggest it may be difficult to organize large group activities that are enjoyable and meaningful to all residents all, or even most, of the time. Moreover, more activity may not be appropriate for all residents. As Lawton, Van Haitsma, and Klapper (1996) argue, not all residents respond positively to increased levels of engagement. The challenge for caregivers, then, is not only to discover activities that are meaningful to residents with varying interests, but also to determine what levels of stimulation produce the most positive outcomes.

The finding that married couples in MPN were observed in their own rooms for the vast majority of observations highlights an issue that may be especially pertinent to care settings based on the residential care model. On the one hand, a fundamental tenet of the residential model of care is that residents should be given the opportunity to participate in a wide variety of activities. Moreover, residents may or may not choose to participate in these activities, depending on their own preferences. One implication for those residents who spend large amounts of time in their own rooms (such as married couples) is that these rooms should be designed to accomodate heavy occupancy. On the other hand, this specialized programming constitutes a significant portion of the residential model of care. In fact, as indicated in Appendix E, one of the admission criteria for MPN is that "the client be able to participate in activities to some degree, and benefit from the special environment and programs". For residents who prefer minimal

participation in activities outside of their own rooms, such as the married couples in MPN, the question arises regarding the extent to which they are benefiting from the specialized programming. Thus, even in care settings such as MPN, in which the philosophy of care, goals, and admission and discharge criteria are explicitly outlined, administrators and direct care staff may find themselves grappling with conflicting policies and how to translate these policies most effectively into every day care practices.

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# Appendix A

## Staff Consent Form

# STAFF CONSENT FOR ALZHEIMER CARE CENTRE

**TITLE:** Staff Experiences in Different Continuing Care Settings

## INVESTIGATORS:

Dr. S. Warren, Professor, Faculty of Rehabilitation Medicine, University of Alberta. Phone: 492-7856
Mr. R. McKim, Program Planner, Capital Health Authority. Phone: 496-5000.
Dr. Lili Liu, Professor, Occupational Therapy, University of Alberta. Phone: 492-5018
Corinna Andiel, Doctoral student, Faculty of Rehabilitation Medicine, University of Alberta.
Phone: 492-4519.

### EXPLANATION:

We are doing research to find out the similarities and differences between staff experiences in the Alzheimer Care Centre and Capital Care Group Special Care Units. In addition, we are interested in determining how staff experience changes at the Alzheimer Care Centre over time. To do this, we will be asking you to fill out questionnaires regarding your work experiences. You will be asked to complete these questionnaires at approximately 6 months and 12 months after the last of the original residents have been admitted. The questionnaires will take approximately one hour to complete each time, and may be done in four 20-minute sessions.

### CONSENT:

I agree to participate in the research project. I understand the results are confidential (forms will be kept in a locked cabinet at the University to be used for research reporting), and that no information by which a staff member can be identified will be published or forwarded to my employer. I understand that my name will be replaced by a code number and that no one but the investigator will have access to my identity. I understand that no one is required to enter this study and that if I agree to participate, it will be a voluntary decision. I can refuse to answer any specific questions. I understand that I am free to withdraw at any time without affecting my employment.

_____ _____
Signature of Staff Member Date

_____ _____
Signature of Principal Investigator Date

_____ _____
Signature of Project Coordinator Date

# STAFF CONSENT FOR SPECIAL CARE UNITS

**TITLE:** Staff Experiences in Different Continuing Care Settings

## INVESTIGATORS:

Dr. S. Warren, Professor, Faculty of Rehabilitation Medicine, University of Alberta. Phone: 492-7856
Mr. R. McKim, Program Planner, Capital Health Authority. Phone: 496-5000.
Dr. Lili Liu, Professor, Occupational Therapy, University of Alberta. Phone: 492-5018
Corinna Andiel, Doctoral student, Faculty of Rehabilitation Medicine, University of Alberta.
Phone: 492-4519.

### EXPLANATION:

We are doing research to find out the similarities and differences between staff experiences in the Alzheimer Care Centre and Capital Care Group Special Care Units. To do this, we will be asking you to fill out questionnaires regarding your work experiences. You will be asked to complete these questionnaires at approximately 6 months and 12 months after the last of the original residents have been admitted. The questionnaires will take approximately one hour to complete and may be completed over four 15-minute sessions.

### CONSENT:

I agree to participate in the research project. I understand the results are confidential (forms will be kept in a locked cabinet at the University to be used for research reporting), and that no information by which a staff member can be identified will be published or forwarded to my employer. I understand that my name will be replaced by a code number and that no one but the investigator will have access to my identity. I understand that no one is required to enter this study and that if I agree to participate, it will be a voluntary decision. I can refuse to answer any specific question. I understand that I am free to withdraw at any time without prejudice to my employment.

_____ _____
Signature of Staff Member Date

_____ _____
Signature of Principal Investigator Date

_____ _____
Signature of Project Coordinator Date

# Appendix B

## Family Consent Form

**TITLE: Changes in Resident Abilities in Continuing Care**

## INVESTIGATORS:

Dr. S. Warren, Professor, Faculty of Rehabilitation Medicine, University of Alberta. Phone: 492-7856

Mr. R. McKim, Program Planner, Capital Health Authority

Dr. Lili Liu, Professor, Faculty of Rehabilitation Medicine

**PURPOSE:** One purpose of this project is to study changes in abilities among residents with Alzheimer Disease who are living in continuing care centres. Staff at the centre where your relative lives will assess his/her physical status, ability to complete activities of daily living, thinking abilities, and emotions and behaviors. Forms which are often used for assessing residents in continuing care centres will be used. The forms will take about 1 to 2 hours to complete and will be done in such a way that your relative will not get over-tired. Your relative will be assessed right away and then approximately every six months over 2 years for a total of 4 times.

A second purpose of this project is to find out how your relative spends his/her time. In order to accomplish this, we will carefully observe and record activities of residents in common areas. The observers will always be at a distance, and will not interfere with your relative's activities. No observations will occur when the resident is involved in private activities, such as bathing toileting or dressing.

Your relative's participation is completely voluntary. Your relative will not be asked to do anything he/she does not wish to do. You can choose to withdraw your relative from the study at anytime without consequence to you or your relative. The information collected will help us to evaluate the effectiveness of care. You are free to ask the principal investigator, Dr. Sharon Warren, about the study at any time at 492-7856.

**CONSENT:** I, _____, voluntarily agree to allow my relative, _____, to participate in the above named project. I understand that all the information collected will be treated confidentially. My relative's name will not appear on any of the completed forms - only a code number. His/her name will not be given in any report arising from the research since all the information will talk about groups not individuals.

_____ _____

Signature of Family Member Date

_____ _____

Signature of Principal Investigator Date

_____ _____

Signature of Project Coordinator Date

# Appendix C

## Staff Questionnaires

# Staff Questionnaire

Staff member I.D.:_____ Interview #:_____

Date of completion: _____ Facility I.D.: _____

Place of completion: _____

# Alzheimer's Disease Knowledge Test

I.D.: _____

## Questions about Alzheimer Disease

**PART I.**

### INSTRUCTIONS

**Choose the best response for each of the following questions by circling the appropriate letter.** ***Please circle only one letter for each question.***

1. The percentage of people over 65 who have severe dementia caused by Alzheimer disease or a related disorder is estimated to be

   A. less than 2%.

   B. about 5%.

   C. about 10%.

   D. 20-25%.

   E. I don't know.

2. The percentage of Alzheimer disease in the general population of Canada is expected to

   A. decrease slightly.

   B. remain approximately the same.

   C. increase in proportion to the number of people over 65.

   D. nearly triple by the year 2000.

   E. I don't know.

3. The cause of Alzheimer disease is

   A. old age.

   B. hardening of the arteries.

   C. senility.

   D. unknown.

   E. I don't know.

4. Preliminary research concerning the role of heredity in Alzheimer disease suggests that

   A. persons with a close relative with Alzheimer disease have increased risk of becoming afflicted.

   B. Alzheimer disease is always transmitted genetically.

   C. Alzheimer disease is only inherited if both parents are carriers of the disease.

   D. Alzheimer disease is never inherited.

   E. I don't know.

5. Larger than normal amounts of aluminum have been found in the brains of some people with Alzheimer disease. Studies investigating the role of aluminum in causing Alzheimer disease

   A. have determined that it is the major cause.

   B. have established that it plays a major role in the onset of the disease.

   C. are inconclusive.

   D. have proven that it is not a cause.

   E. I don't know.

6. A person suspected of having Alzheimer disease should be evaluated as soon as possible because

   A. prompt treatment of Alzheimer disease may prevent worsening of the symptoms.

   B. prompt treatment of Alzheimer disease may reverse symptoms.

   C. it is important to rule out and treat reversible disorders.

   D. it is best to institutionalize an Alzheimer disease patient early in the course of the disease.

   E. I don't know.

7. Which of the following procedures is required to confirm that symptoms are due to Alzheimer disease?

   A. Mental status testing.

   B. Autopsy.

   C. CT scan.

   D. Blood test.

   E. I don't know.

8. Which of the following conditions sometimes resembles Alzheimer disease?

   A. Depression.

   B. Delirium.

   C. Stroke.

   D. All of the above.

   E. I don't know.

9. Which of the following is always present in Alzheimer disease?

   A. Loss of memory.

   B. Loss of memory, incontinence.

   C. Loss of memory, incontinence, hallucinations.

   D. None of the above.

   E. I don't know.

10. Although the rate of progression of Alzheimer disease is variable, the average life expectancy after onset is

   A. 6 months - 1 year.

   B. 1-5 years.

   C. 6-12 years.

   D. 15-20 years.

   E. I don't know.

11. Most researchers investigating the use of lecithin as a treatment for Alzheimer disease have concluded that it

   A. reverses symptoms.

   B. prevents further decline.

   C. reverses symptoms and prevents further decline.

   D. has no effect on the disease.

   E. I don't know.

12. Which of the following statements describes a reaction Alzheimer disease patients may have to their illness?

    A. They are unaware of their symptoms.

    B. They are depressed.

    C. They deny their symptoms.

    D. All of the above.

    E. I don't know.

13. Sometimes Alzheimer disease patients wander away from home. Caregivers can best manage this problem by

    A. reasoning with the patient about the potential dangers of wandering.

    B. sharing feelings of concern with the patient in a calm and reassuring manner.

    C. making use of practical solutions such as locked doors.

    D. remaining with the patient at all times to prevent the behavior.

    E. I don't know.

14. Which statement is true concerning treatment of Alzheimer disease patients who are depressed?

    A. It is usually useless to treat them for depression because feelings of sadness and inadequacy are part of the disease process.

    B. Treatments of depression may be effective in alleviating depressive symptoms.

    C. Anti-depressant medication should not be prescribed.

    D. Proper medication may alleviate symptoms of depression and prevent further intellectual decline.

    E. I don't know.

15. What is the role of nutrition in Alzheimer disease?

    A. Proper nutrition can prevent Alzheimer disease.

    B. Proper nutrition can reverse the symptoms of Alzheimer disease.

    C. Poor nutrition can make the symptoms of Alzheimer disease worse.

    D. Nutrition plays no role in Alzheimer disease.

    E. I don't know.

16. What is the effect of orienting information (i.e., reminders of the date and the place) on Alzheimer disease patients?

    A. It produces permanent gains in memory.

    B. It will slow down the course of the disease.

    C. It increases confusion in approximately 50% of patients.

    D. It has no long lasting effect on the memory of patients.

    E. I don't know.

17. People sometimes write notes to themselves as reminders. How effective is this technique for Alzheimer disease patients?

    A. It can never be used because reading and comprehension are too severely impaired.

    B. It may be useful for the mildly demented patient.

    C. It is a crutch which may contribute to further decline.

    D. It may produce permanent gains in memory.

    E. I don't know.

18. When an Alzheimer disease patient begins to have difficulty performing self-care activities, many mental health professionals recommend that the caregiver

A. allow the patient to perform the activities regardless of the outcome.

B. assist with the activities so that the patient can remain as independent as possible.

C. take over the activities right away to prevent accidents.

D. make plans to have the patient moved to a nursing home.

E. I don't know.

# True-False Test

I.D.: _____

**PART II.**

## INSTRUCTIONS

**Print a "T" beside each of the following statements if you think it is true, and print an "F" if you think it is false. If you don't know whether the statment is true or false, print "DK" for "Don't Know".**

**True/False/
Don't Know**

_____ 1. The most common cause of behavioral outbursts for any individual with dementia is an elevation in that person's anxiety level.

_____ 2. The attitude and approach of the staff member on duty can influence the behavior and functioning ability of any individual with dementia.

_____ 3. Individuals with dementia are constantly looking for things that are familiar in order to make sense of the world around them and to decrease their anxiety.

_____ 4. Caregivers who have repeated contact with someone with dementia are guaranteed that the person will remember who they are. The person may not remember the caregiver's name, but will remember his/her face.

_____ 5. Encouraging individuals with dementia to perform just slightly beyond their functioning ability is the best way to challenge that person to reach his maximum level of functioning.

_____ 6. One of the major fears of a person with Alzheimer disease is that he/she will eventually lose control over her dignity and need to rely on others to protect his/her dignity for him/her.

_____ 7. Regardless of functioning level, persons with dementia must be treated as though they are "normal adults", without expecting "normal" behavior.

_____ 8. Even though individuals with dementia experience an impairment of judgement, they are aware when they are doing something wrong or inappropriate.

_____ 9. Family members are an important part of the assessment process, providing the missing pieces of that person's past.

_____ 10. Individuals with dementia take what they see and make it fit their reality.

_____ 11. The functioning ability of an individual with dementia can be negatively influenced by the inappropriate approach of the formal caregiver.

_____ 12. The behaviors of someone with dementia always have meaning.

_____ 13. The only thing that can be done about aggression is to deal with it when it occurs.

_____ 14. It is important when working with individuals with dementia to focus on their strengths, and not their limitations.

_____ 15. If the person stands up and walks away when you are assessing or carrying on a conversation, it usually means that you have done something wrong.

# Caregiver Stress Inventory

I.D.: _____

## Questions about Caring for Residents

### INSTRUCTIONS

The following statements describe behaviors or situations you may have experienced. Please indicate how much each statement describes a source of stress for you and the frequency of the behavior by circling a number on the scales provided. ***Please ensure that you circle only one number for each statement.***

| | How much stress does this situation cause you? | | | | | | |
|---|---|---|---|---|---|---|---|
| | Very Little | | | | | | Very Much |
| 1. Residents being uncooperative because they do not understand my instructions. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. Residents not urinating in the urinal or toilet. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. Residents constantly (or for frequent long periods) yelling loudly or laughing shrilly. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. Residents striking or trying to strike me. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. Residents rummaging through or using staff belongings (e.g., staff lunch in refrigerator, staff restroom). | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. Residents trying to go home or each day thinking they are going home. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| | How much stress does this situation cause you? | | | | | | |
|---|---|---|---|---|---|---|---|
| | Very Little | | | | | | Very Much |
| 7. Residents becoming agitated when taken off the unit (e.g., in a car) or to unfamiliar surroundings. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. Residents being constantly agitated and unable to be calmed. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. Residents requiring the attention of one staff person most of the time. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10. Residents walking around dressed inappropriately. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11. Residents continuing to repeat inappropriate behavior after staff have intervened. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 12. Residents' moods changing suddenly. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 13. Residents falling due to unsteadiness when standing or walking. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 14. Residents being uncooperative even when they apparently understand instructions. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 15. Residents constantly repeating "I'm hungry" or "I want food". | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 16. Residents' behaviors indicating that something is wrong, but being unable tell you what. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| | How much stress does this situation cause you? | | | | | | |
|---|---|---|---|---|---|---|---|
| | Very Little | | | | | | Very Much |
| 17. Residents being so agitated and difficult to handle that I think I am doing my job badly. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 18. Residents talking constantly. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 19. Residents cussing me when I am delivering their care. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 20. Residents requiring help to eat, but refusing help. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 21. Residents requiring constant reminding to eat, bathe, or toilet. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 22. Worrying that residents will hurt themselves because of their constant agitation. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 23. Residents having periods of extremely inappropriate behavior that last for several hours. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 24. Worrying that the care that is provided is not what the residents really need. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 25. Residents not staying in bed at night. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 26. Residents following me or staying at my side all the time, asking questions, forgetting or not accepting my answers. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| | How much stress does this situation cause you? | | | | | | |
|---|---|---|---|---|---|---|---|
| | Very Little | | | | | | Very Much |
| 27. Requiring a great deal of staff time and attention to complete simple tasks. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 28. Residents rummaging in other residents' rooms. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 29. Residents being poorly groomed. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 30. Residents requiring my attention even though I am busy with other necessary tasks. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 31. Residents putting their possessions in inappropriate places (e.g., toilet, waste basket). | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 32. Residents refusing their medication. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 33. Fearing residents will choke, aspirate or get pneumonia because they forgot to swallow. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 34. Residents not staying in chairs or bed. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 35. Feeling a lack of knowledge about how to best care for and help residents (e.g., how to help with eating, how to help maintain independence with ADLs). | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| | How much stress does this situation cause you? | | | | | | |
|---|---|---|---|---|---|---|---|
| | Very Little | | | | | | Very Much |
| 36. The amount of patience needed to work with residents (e.g., the amount of time it takes, inappropriate behavior). | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 37. The lack of resources (agency commitment) to care appropriately for the residents. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 38. The lack of a unified approach among all staff and administration to care for and assume responsibility for the residents' care. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 39. Visitors often not understanding the residents' behavior, doing things to provoke agitation and I often not knowing what I can do to counsel the visitors. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 40. Residents being unpredictable (e.g., being cooperative and calm and then suddenly getting angry, screaming, grabbing or hitting me). | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 41. Worrying about residents irritating each other, getting into fights, and hurting each other. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 42. The current physical environment for caring for the residents. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 43. Being constantly reminded about how to respond to behavior of residents. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

# Attitude Toward Dementia Patients Scale

I.D.: _____

## Questions about Residents with Dementia

### INSTRUCTIONS

**Please circle the number that corresponds to the extent you agree or disagree with each statement.** ***Please ensure that you circle only one number for each statement.***

| | **Agree Completely** | | | | **Disagree Completely** |
|---|---|---|---|---|---|
| 1. Long corridors are necessary as unrestricted movement decreases their anxiety. | 1 | 2 | 3 | 4 | 5 |
| 2. A resident who is suffering from dementia only needs good personal care. | 1 | 2 | 3 | 4 | 5 |
| 3. Most residents with dementia are happy and co-operative. | 1 | 2 | 3 | 4 | 5 |
| 4. Relatives should have greater opportunities for contributing to the personal care. | 1 | 2 | 3 | 4 | 5 |
| 5. To care for residents with dementia is considered a high status job. | 1 | 2 | 3 | 4 | 5 |
| 6. Intensive care is too aggressive for the residents with dementia, e.g., intravenous fluid therapy and antibiotic treatment. | 1 | 2 | 3 | 4 | 5 |
| 7. I find it easy to make emotional contacts with residents who have dementia. | 1 | 2 | 3 | 4 | 5 |
| 8. The care of residents with dementia is only a matter of keeping them hospitalized. | 1 | 2 | 3 | 4 | 5 |
| 9. Residents with dementia should, to a greater extent, be cared for in their own homes. | 1 | 2 | 3 | 4 | 5 |

| | Agree Completely | | | | Disagree Completely |
|---|---|---|---|---|---|
| 10. If I could chose, I would prefer to work only with residents with dementia. | 1 | 2 | 3 | 4 | 5 |
| 11. Rehabilitation of residents with dementia is unrealistic. | 1 | 2 | 3 | 4 | 5 |
| 12. Too many resources are used on residents with dementia in spite of their bad prognosis. | 1 | 2 | 3 | 4 | 5 |
| 13. Caring for residents with dementia is interesting. | 1 | 2 | 3 | 4 | 5 |
| 14. I wish there were no residents with dementia on my ward. | 1 | 2 | 3 | 4 | 5 |
| 15. I do not find it stimulating to talk to residents with dementia. | 1 | 2 | 3 | 4 | 5 |
| 16. I have a positive attitude towards residents with dementia. | 1 | 2 | 3 | 4 | 5 |
| 17. It is just as meaningful to work in long-stay care as in acute care. | 1 | 2 | 3 | 4 | 5 |
| 18. Residents with dementia are aggressive and irritable. | 1 | 2 | 3 | 4 | 5 |
| 19. My work on the ward is meaningful for those who suffer from dementia. | 1 | 2 | 3 | 4 | 5 |
| 20. The institutional life of residents with dementia has no meaning. | 1 | 2 | 3 | 4 | 5 |

# Kogan's Old People Scale

I.D.: _____

## Questions about Older Adults

### INSTRUCTIONS

**Please circle the number that corresponds most closely with how you feel about each of the following statements.** ***Please ensure that you circle only one number for each statement.***

| | **Strongly agree** | **Agree** | **Don't know** | **Disagree** | **Strongly disagree** |
|---|---|---|---|---|---|
| 1. It would probably be better if most old people lived in residential units with people of their own age. | 1 | 2 | 3 | 4 | 5 |
| 2. It would probably be better if most old people lived in residential units that also housed younger people. | 1 | 2 | 3 | 4 | 5 |
| 3. There is something different about old people; it's hard to figure out what makes them tick. | 1 | 2 | 3 | 4 | 5 |
| 4. Most old people are really no different from anybody else; they're as easy to understand as younger people. | 1 | 2 | 3 | 4 | 5 |
| 5. Most old people are set in their ways and are unable to change. | 1 | 2 | 3 | 4 | 5 |
| 6. Most old people are capable of adjustments when the situation demands it. | 1 | 2 | 3 | 4 | 5 |
| 7. Most old people would prefer to quit work as soon as pensions or their children can support them. | 1 | 2 | 3 | 4 | 5 |
| 8. Most old people would prefer to continue working just as long as they possibly can rather than be dependent on anybody. | 1 | 2 | 3 | 4 | 5 |
| 9. Most old people tend to let their homes become shabby and unattractive. | 1 | 2 | 3 | 4 | 5 |

| | Strongly agree | Agree | Don't know | Disagree | Strongly disagree |
|---|---|---|---|---|---|
| 10. Most old people can generally be counted on to maintain a clean, attractive home. | 1 | 2 | 3 | 4 | 5 |
| 11. It is foolish to claim that wisdom comes with old age. | 1 | 2 | 3 | 4 | 5 |
| 12. People grow wiser with the coming of age. | 1 | 2 | 3 | 4 | 5 |
| 13. Old people have too much power in business and politics. | 1 | 2 | 3 | 4 | 5 |
| 14. Old people have too little power in business and politics. | 1 | 2 | 3 | 4 | 5 |
| 15. Most old people make one feel ill at ease. | 1 | 2 | 3 | 4 | 5 |
| 16. Most old people are very relaxing to be with. | 1 | 2 | 3 | 4 | 5 |
| 17. Most old people bore others by their insistence on talking about the "good old days." | 1 | 2 | 3 | 4 | 5 |
| 18. One of the more interesting and entertaining qualities of most old people is their accounts of past experiences. | 1 | 2 | 3 | 4 | 5 |
| 19. Most people spend too much time prying into the affairs of others and giving unsought advice. | 1 | 2 | 3 | 4 | 5 |
| 20. Most old people tend to keep to themselves and give advice only when asked. | 1 | 2 | 3 | 4 | 5 |
| 21. If old people expect to be liked, their first step is to try to get rid of their irritating faults. | 1 | 2 | 3 | 4 | 5 |
| 22. When you think about it, old people have the same faults as everybody else. | 1 | 2 | 3 | 4 | 5 |

| | Strongly agree | Agree | Don't know | Disagree | Strongly disagree |
|---|---|---|---|---|---|
| 23. In order to maintain a nice neighbourhood, it would be best if too many old people did not live in it. | 1 | 2 | 3 | 4 | 5 |
| 24. You can count on finding a nice residential neighbourhood when there is a sizable number of old people living in it. | 1 | 2 | 3 | 4 | 5 |
| 25. There are a few exceptions, but in general most old people are pretty much alike. | 1 | 2 | 3 | 4 | 5 |
| 26. It is evident that most old people are very different from one another. | 1 | 2 | 3 | 4 | 5 |
| 27. Most old people are notconcerned with their appearance; they're so untidy. | 1 | 2 | 3 | 4 | 5 |
| 28. Most old people seem to be quite clean and neat in their personal appearance. | 1 | 2 | 3 | 4 | 5 |
| 29. Most old people are irritable, grouchy and unpleasant. | 1 | 2 | 3 | 4 | 5 |
| 30. Most old people are cheerful, agreeable and good humored. | 1 | 2 | 3 | 4 | 5 |
| 31. Most old people are constantly complaining about the behaviour of the younger generation. | 1 | 2 | 3 | 4 | 5 |
| 32. One seldom hears old people complaining about the behavior of the younger generation. | 1 | 2 | 3 | 4 | 5 |
| 33. Most old people make excessive demands for love and reassurance. | 1 | 2 | 3 | 4 | 5 |
| 34. Most old people need no more love and reassurance than anyone else. | 1 | 2 | 3 | 4 | 5 |

# Maslach Burnout Inventory

*Christina Maslach • Susan E. Jackson*

# *Human Services Survey*

The purpose of this survey is to discover how various persons in the human services or helping professions view their jobs and the people with whom they work closely. Because persons in a wide variety of occupations will answer this survey, it uses the term *recipients* to refer to the people for whom you provide your service, care, treatment, or instruction. When answering this survey please think of these people as recipients of the service you provide, even though you may use another term in your work.

On the following page there are 22 statements of job-related feelings. Please read each statement carefully and decide if you ever feel this way *about your job.* If you have *never* had this feeling, write a "0" (zero) before the statement. If you have had this feeling, indicate *how often* you feel it by writing the number (from 1 to 6) that best describes how frequently you feel that way. An example is shown below.

**Example:**

| HOW OFTEN: | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|
| | Never | A few times a year or less | Once a month or less | A few times a month | Once a week | A few times a week | Every day |

| HOW OFTEN 0 - 6 | Statement: |
|---|---|
| _____ | I feel depressed at work. |

If you *never* feel depressed at work, you would write the number "0" (zero) under the heading "HOW OFTEN." If you *rarely* feel depressed at work (a few times a year or less), you would write the number "1." If your feelings of depression are fairly frequent (a few times a week, but not daily) you would write a "5."

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# *Human Services Survey*

| HOW OFTEN: | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|
| | Never | A few times a year or less | Once a month or less | A few times a month | Once a week | A few times a week | Every day |

| HOW OFTEN 0 - 6 | Statements: |
|---|---|
| 1. _____ | I feel emotionally drained from my work. |
| 2. _____ | I feel used up at the end of the workday. |
| 3. _____ | I feel fatigued when I get up in the morning and have to face another day on the job. |
| 4. _____ | I can easily understand how my recipients feel about things. |
| 5. _____ | I feel I treat some recipients as if they were impersonal objects. |
| 6. _____ | Working with people all day is really a strain for me. |
| 7. _____ | I deal very effectively with the problems of my recipients. |
| 8. _____ | I feel burned out from my work. |
| 9. _____ | I feel I'm positively influencing other people's lives through my work. |
| 10. _____ | I've become more callous toward people since I took this job. |
| 11. _____ | I worry that this job is hardening me emotionally. |
| 12. _____ | I feel very energetic. |
| 13. _____ | I feel frustrated by my job. |
| 14. _____ | I feel I'm working too hard on my job. |
| 15. _____ | I don't really care what happens to some recipients. |
| 16. _____ | Working with people directly puts too much stress on me. |
| 17. _____ | I can easily create a relaxed atmosphere with my recipients. |
| 18. _____ | I feel exhilarated after working closely with my recipients. |
| 19. _____ | I have accomplished many worthwhile things in this job. |
| 20. _____ | I feel like I'm at the end of my rope. |
| 21. _____ | In my work, I deal with emotional problems very calmly. |
| 22. _____ | I feel recipients blame me for some of their problems. |

| (Administrative use only) | | cat. | | cat. | | cat. |
|---|---|---|---|---|---|---|
| EE: | _____ | _____ | DP: _____ | _____ | PA: _____ | _____ |

# Demographic Information and Open-Ended Questions

**I.D.:** _____

**Demographic Information**

**Please indicate with a checkmark (√):**

1. Your age:

_____ 25 or under
_____ 26-35
_____ 36-45
_____ 46-55
_____ over 55

2. Your formal training/certificates (Check as many that apply):

_____ Personal Care Aide
_____ Residential Aide
_____ Home Support Aide
_____ Licensed Practical Nurse
_____ Registered Nurse
_____ Registered Psychiatric Nurse
_____ Certified Graduate Nurse
_____ Other (Please specify):_____
_____ None of the Above

3. The *highest* level of education you have obtained:

_____ 9 Years or Less
_____ Partial High School
_____ High School Graduate
_____ Trade or Technical School (e.g., NAIT, SAIT)
_____ Partial College/University
_____ College/University Graduate
_____ Other (Please specify):_____

4. How long you have worked with older adults as a paid employee in long-term care (including community care):

_____ Less Than One Year
_____ Between One and Five Years
_____ Between Six and Ten Years
_____ More Than Ten Years
_____ Never

5. On average, how many hours per week do you work at this long-term care setting?

_____ hours per week

6. On average, how many hours per week do you work at *other* long-term care settings?

_____ hours per week

I.D.: _____

**Qualitative Information**

1. Briefly state three points which summarize the staff's day-to-day goals when delivering care to the residents of this long-term care setting.

_____

_____

_____

_____

2. On a scale of "1" to "10", please indicate how able you feel you are to carry out these goals on a day-to-day basis:

Very able Not at all able

1 2 3 4 5 6 7 8 9 10

3. Are there things that make it difficult for you to carry out the goals on a day-to-day basis? If so, what are they?

_____

_____

_____

_____

_____

4. What do you like about your job?

5. What do you *not* like about your job?

6. Are there any topics related to care for persons with Alzheimer disease you would like to have more classroom training in? If yes, please indicate which areas.

7. Are there any aspects of caregiving you would like to have more hands-on training in? If yes, please indicate which areas.

_____

_____

_____

_____

8. On a scale of "1" to "10", please indicate how much you like coming to your job each day:

Like very much Don't like at all

1 2 3 4 5 6 7 8 9 10

# Appendix D

## Behavioural Checklist and Ethogram

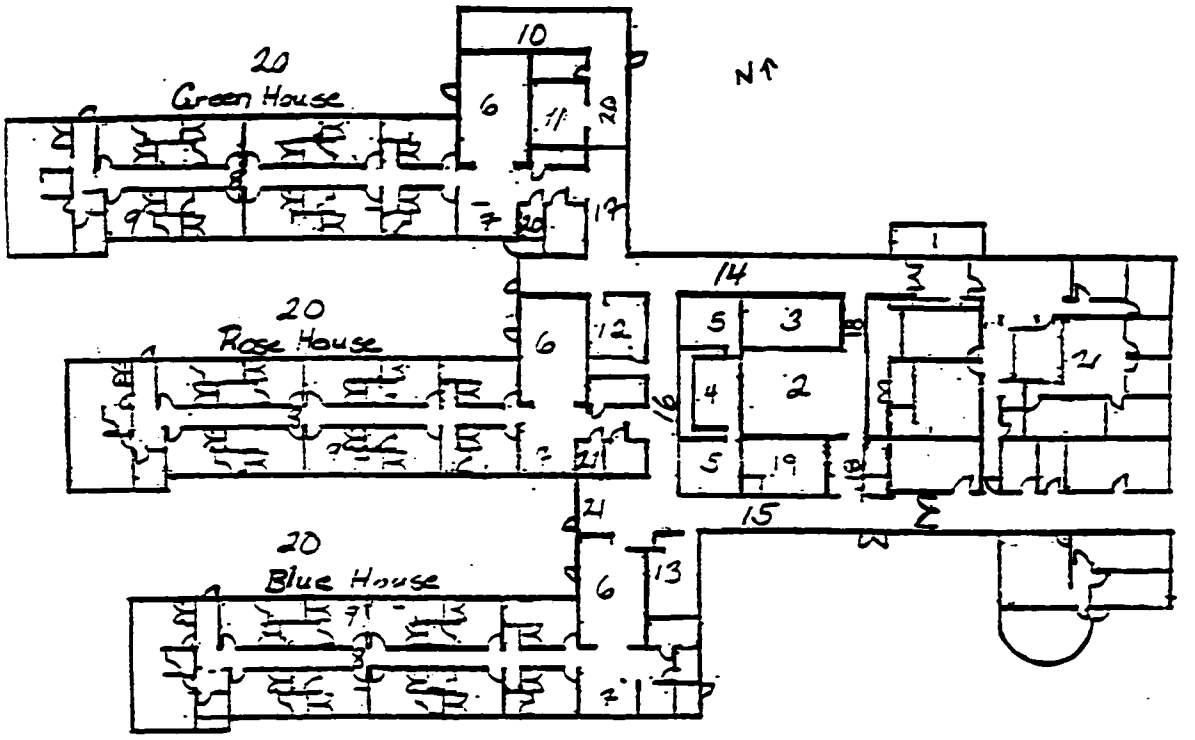
**Date:** _____ **Observer:** _____ **Resident:** _____

**Time:** _____ **Facility Code:** _____

| LOCATION | |
|---|---|
| Front entrance 1 | |
| | |
| Great room 2 | |
| Family dining rm/kitchen 3 | |
| Library 4 | |
| Sitting area 5 | |
| | |
| House living/dining room 6 | own |
| | other |
| | |
| House kitchen 7 | own |
| | other |
| | |
| House hallway 8 | own |
| | other |
| | |
| Resident bed/bathroom 9 | own |
| | other |
| | |
| Horticulture room 10 | |
| Music room 11 | |
| Arts and crafts room 12 | |
| Entertainment room 13 | |
| | |
| North hallway 14 | |
| South hallway 15 | |
| West hallway 16 | |
| Northwest hallway 17 | |
| Great room hallways 18 | |
| | |
| Hair salon 19 | |
| | |
| Secure courtyards 20 | |
| | |
| Other 21 | |
| | |
| Unobservable 22 | |

| BEHAVIOR | |
|---|---|
| A. NULL | |
| B. COMMUNICATION | res: y n |
| | stf: y n |
| | vis: y n |
| | oth: y n |
| C. A.D.L. | |
| | res: y n |
| | stf: y n |
| | vis: y n |
| | oth: y n |
| D. WORK | |
| (Specify) | res: y n |
| | stf: y n |
| | vis: y n |
| | oth: y n |
| E. LEISURE | |
| (Specify) | res: y n |
| | stf: y n |
| | vis: y n |
| | oth: y n |
| F. OTHER: | |
| Socially inapprop. | res: y n |
| (specify) | stf: y n |
| | vis: y n |
| | oth: y n |
| Walking | |
| | res: y n |
| | stf: y n |
| | vis: y n |
| | oth: y n |
| People watching/ | |
| looking out the window | res: y n |
| | stf: y n |
| | vis: y n |
| | oth: y n |
| Other (Specify) | |
| | res: y n |
| | stf: y n |
| | vis: y n |
| | oth: y n |
| F. UNOBSERVBLE | |

**Floor plan of McConnell Place North, Edmonton, Alberta**




1) Front entrance
2) Great room
3) Family dining room/kitchen
4) Library
5) Sitting area
6) House living/dining room
7) House kitchen
8) House hallway
9) Resident bedroom/bathroom
10) Horticulture room
11) Music room
12) Arts and crafts room
13) Entertainment room
14) North hallway
15) South hallway
16) West hallway
17) Northwest hallway
18) Great room hallways
19) Hair salon
20) Secure courtyards
21) Other location - includes locations not listed above, such as administration area, sitting area in front of blue house, public washroom, music room hallway.
22) Unobservable

**Date:** _____ **Observer:** _____ **Resident:** _____

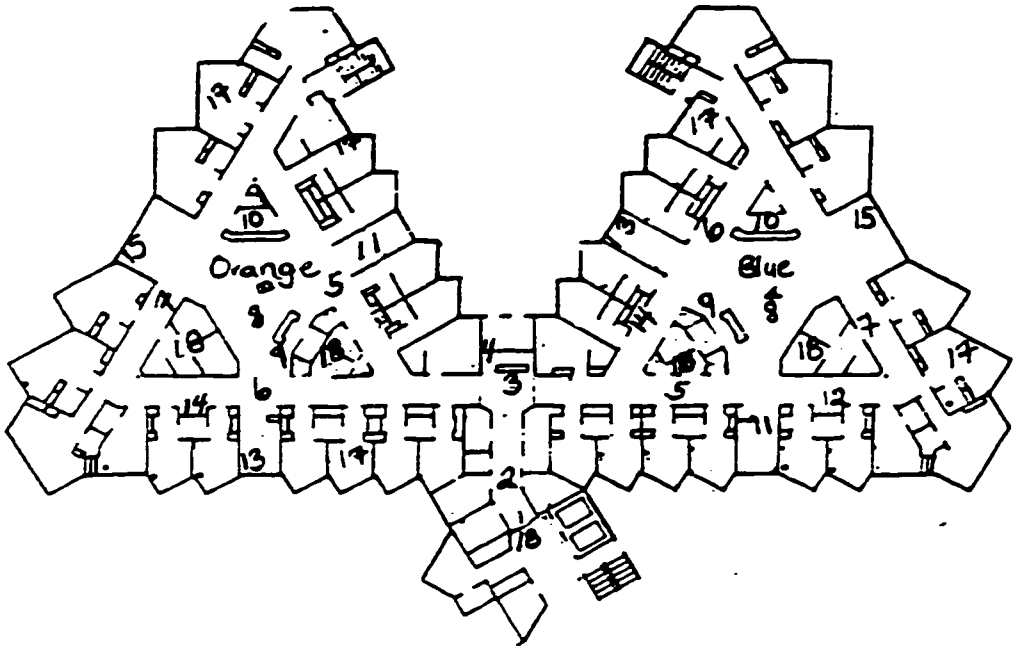
**Time:** _____ **Facility Code:** _____

| **LOCATION** | |
|---|---|
| | |
| Entrance (1) | |
| Entrance hallway (2) | |
| Reception desk (3) | |
| Garden entrance (4) | |
| | |
| Central dining area (8) | bl or |
| Nursing station (9) | bl or |
| Kitchen (10) | bl or |
| Resident bed/bthrm (17) | bl or |
| | own oth |
| | |
| HALLWAYS: | |
| Washroom hallway (5) | bl or |
| Utility/linen hallway (6) | bl or |
| Big lounge hallway (7) | bl or |
| | |
| LOUNGES | |
| Washroom hllwy LOUNGE (11) | bl or |
| Utility/linen hllwy LOUNGE (13) | bl or |
| Big lounge hllwy LOUNGE (15) | bl or |
| | |
| ALCOVES | |
| Washroom hllwy ALCOVE (12) | bl or |
| Utility/linen hllwy ALCOVE (14) | bl or |
| Big lounge hllwy ALCOVE (16) | bl or |
| | |
| Other (18) | |
| | |
| Unobservable (19) | |

bl=blue unit (unit A)
or=orange uni (unit B)

| **BEHAVIOR** | |
|---|---|
| A. NULL | |
| B. COMMUNICATION | res: y n |
| | stf: y n |
| | vis: y n |
| | oth: y n |
| C. A.D.L. | |
| | res: y n |
| | stf: y n |
| | vis: y n |
| | oth: y n |
| D. WORK | |
| (Specify) | res: y n |
| | stf: y n |
| | vis: y n |
| | oth: y n |
| E. LEISURE | |
| (Specify) | res: y n |
| | stf: y n |
| | vis: y n |
| | oth: y n |
| F. OTHER: | |
| Socially inapprop. | res: y n |
| (specify) | stf: y n |
| | vis: y n |
| | oth: y n |
| Walking | |
| | res: y n |
| | stf: y n |
| | vis: y n |
| | oth: y n |
| People watching/ looking out the window | |
| | res: y n |
| | stf: y n |
| | vis: y n |
| | oth: y n |
| Other (Specify) | |
| | res: y n |
| | stf: y n |
| | vis: y n |
| | oth: y n |
| **F. UNOBSERVBLE** | |

## Floor Plan of Dickensfield, Edmonton, AB




| | Blue Unit | | Orange Unit |
|---|---|---|---|
| 1) | Entrance | 1) | Entrance |
| 2) | Entrance hallway | 2) | Entrance hallway |
| 3) | Reception desk | 3) | Reception desk |
| 4) | Garden entrance | 4) | Garden entrance |
| 5) | Washroom hallway | 5) | Washroom hallway |
| 6) | Utility/linen hallway | 6) | Utility/linen hallway |
| 7) | Big lounge hallway | 7) | Big lounge hallway |
| 8) | Central dining area | 8) | Central dining area |
| 9) | Nursing station | 9) | Nursing station |
| 10) | Kitchen | 10) | Kitchen |
| 11) | Lnge- washroom hallway | 11) | Lnge- washroom hallway |
| 12) | Alcove - washroom hallway | 12) | Alcove - washroom hallway |
| 13) | Lnge - utility/linen hallway | 13) | Lnge - utility/linen hallway |
| 14) | Alcove - utility/linen hallway | 14) | Alcove - utility/linen hallway |
| 15) | Lnge - big lounge hallway | 15) | Lnge - big lounge hallway |
| 16) | Alcove - big lounge hallway | 16) | Alcove - big lounge hallway |
| 17) | Resident bed/bathroom | 17) | Resident bed/bathroom |
| 18) | Other* | 18) | Other* |
| 19) | Unobservable | 19) | Unobservable |

* Includes all other locations not included above, such as stairwells, administration area behind nursing station, storage, clean utility, linen, locked staff washrooms, laundry, tv room, office, housekeeping.

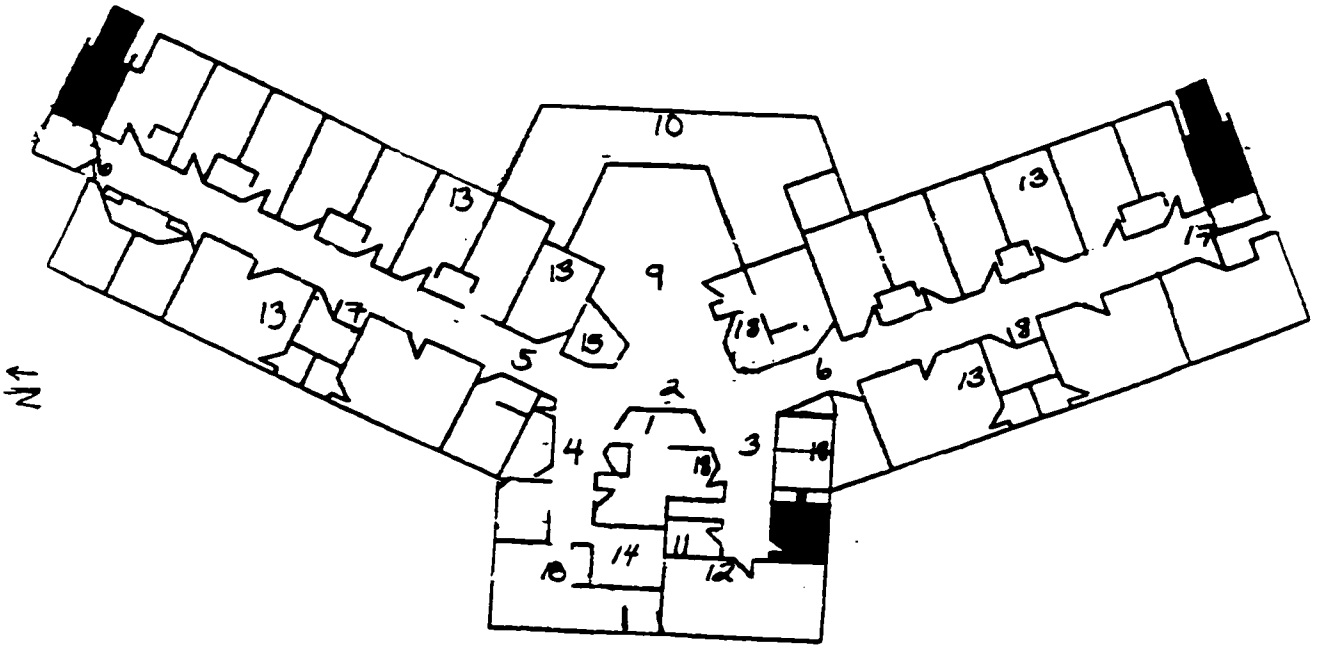
**Date:** _____ **Observer:** _____ **Resident:** _____

**Time:** _____ **Facility Code:** _____

| LOCATION | |
|---|---|
| | |
| Nursing station 1 | |
| | |
| Nursing station hall 2 | |
| Elevator hall 3 | |
| Washroom hall 4 | |
| North hall 5 | |
| South hall 6 | |
| | |
| North hall alcove 7 | |
| South hall alcove 8 | |
| | |
| Day room 9 | |
| Balcony 10 | |
| | |
| Kitchen 11 | |
| Longhorn lounge 12 | |
| | |
| Resident bed/bathroom 13 | own |
| | other |
| | |
| Family/resident room 14 | |
| Conference room 15 | |
| | |
| North exit 16 | |
| South exit 17 | |
| | |
| Other 18 | |
| | |
| Unobservable | |

| BEHAVIOR | |
|---|---|
| A. NULL | |
| B. COMMUNICATION | res: y n |
| | stf: y n |
| | vis: y n |
| | oth: y n |
| C. A.D.L. | |
| | res: y n |
| | stf: y n |
| | vis: y n |
| | oth: y n |
| D. WORK | |
| (Specify) | res: y n |
| | stf: y n |
| | vis: y n |
| | oth: y n |
| E. LEISURE | |
| (Specify) | res: y n |
| | stf: y n |
| | vis: y n |
| | oth: y n |
| F. OTHER: | |
| Socially inapprop. | res: y n |
| (specify) | stf: y n |
| | vis: y n |
| | oth: y n |
| Walking | |
| | res: y n |
| | stf: y n |
| | vis: y n |
| | oth: y n |
| People watching/ | |
| looking out the window | res: y n |
| | stf: y n |
| | vis: y n |
| | oth: y n |
| Other (Specify) | |
| | res: y n |
| | stf: y n |
| | vis: y n |
| | oth: y n |
| F. UNOBSERVBLE | |

## Map of Lynnwood Cognitive Support Unit - May, 1996




1) Nursing station
2) Nursing station hall
3) Elevator hall
4) Washroom hall
5) North hall
6) South hall
7) North hall alcove
8) South hall alcove
9) Day room
10) Balcony
11) Kitchen
12) Longhorn lounge
13) Resident room/bathroom
14) Family/resident room
15) Conference room
16) North exit
17) South exit
18) Other - includes all other locations not listed above, such as the tub room, medication room, OT area, housekeeping room, public washrooms, stairs, and elevators.

## Coding Scheme for Instantaneous Scans

### 1. Ethogram rationale

1) The goal of this study is to determine how residents of different types of geriatric facilities spend their time during the day.

2) To accomplish this goal, the ethogram is designed to record the location and activities of the residents in a geriatric facility.

3) Of particular interest is the category developed to document the Activities of Daily Living (A.D.L.s) and non-A.D.L.s. This category allow us to observe whether residents are engaged in activities during the day.

4) In addition, location will be recorded to determine whether resident activities occur in particular functional areas of the geriatric setting.

5) Specifically, data collected from behavioural observations using this ethogram will be used to answer the following questions:

a) Is there a difference between residents of McConnell Place North and residents of the Special Care Units in the amount of time they are observed engaged in activities as opposed to null behaviour?

b) Is there a difference between residents of McConnell Place North and residents of the Special Care Units in the amount of time they are observed engaged in A.D.L., work, leisure and other activities?

c) Is there a difference between residents of McConnell Place North and residents of the Special Care Units in the type of work and leisure activities they engage in?

d) Is there a difference between residents of McConnell Place North and residents of the Special Care Units in with whom they are engaging in A.D.L., work, leisure and other activities?

e) Is there a difference between residents of McConnell Place North and residents of the Special Care Units in the amount of time they are observed communicating with others?

f) Is there a difference between residents of McConnell Place North and residents of the Special Care Units in with whom they are communicating?

g) Is there a difference between residents of McConnell Place North and residents of the Special Care Units in terms of where they spend their time overall?

h) Is there a difference between residents of McConnell Place North and residents of the Special Care Units in terms of where they engage in A.D.L., work, leisure and other activities?

### 2. Behavioral Catalogue Characteristics

1) Items within the location and activities categories have been defined operationally to ensure a high level of interobserver reliability.

2) The list of items is exhaustive within each category. That is, all possible behaviors of interest to this study can be recorded using the behavior items.

3) Items within the location category are mutually exclusive. Therefore, only one item can

be selected for this category per resident for each scan.

4) Items within the activities category are not mutually exclusive and, therefore, the observer is required to check off as many appropriate items as apply within the activity category. When more than one item has been selected, it will be treated as a separate activity item for the purposes of data analysis, thereby ensuring that the items, or combination of items, are mutually exclusive. For example, communication, work activity, and communication while engaging in a work activity will be treated as three separate items within the category of activities for the purpose of data analysis.

**3. Rules and Procedures for Instantaneous Scans**

1) Data collection is *person-centered* rather than place-centered. That is, recording occurs using a designated list of residents whose location and activities are recorded throughout the day, regardless of where they are located within the facility. In contrast, a place-centered approach to data collection involves recording the actions of persons *within a particular location* (Sommer and Sommer, 1986).

2) One scan per resident should be completed every sixty minutes, as close to the same time every hour as possible. This schedule will produce one round of scans per hour. This rate is designed to capture resident activities as they occur, without recording the same activity for the same resident for two or more scans.

3) The behavioral observer should locate the first person on the list, record his/her location, and then record what he/she is doing. Then the observer should locate the second person on the list, record his/her location, and then record what he/she is doing, and so on.

4) When attempting to locate a resident, the observer should proceed as follows: If the observer is presently in the house where the resident's room is located, the observer should attempt to locate the resident within that house (i.e., the kitchen, dining room, or bed/bathroom. If the resident is not located in the house, the the observer should scan the common areas (i.e., the library, sitting areas, great room, the north, south, west, and northwest hallways, music room, arts and crafts room, and entertainment room). If the resident has not been found at this point, the observer should record the resident's location as "unobservable" and note that the resident could not be located. If the observer is in a common area at the beginning of the scan, however, she should walk through the remaining common areas before going to the resident's house to locate him/her. If the resident has not been found at this point, the observers then should proceed to record the location and behavior of the remaining residents. After the location and behavior of the remaining residents have been recorded, the observers should then attempt to locate the resident who could not be found earlier. If this resident is found, the observer should make a note beside the "unobservable" checkmark of the location and behavior of the resident who could not be found earlier.

5) The behavioral coder should not enter a closed room. The only exception to this rule is at the beginning of a coding session when it is necessary to determine if the resident is in the closed room (unless the observers are aware that the resident is with a visitor). If the resident is found in the room, the coder should then indicate the resident's location and check off "unobservable" for the resident's activity status if the observer cannot determine what the resident was doing immediately before the resident entered.

6) If the resident cannot be found after the second attempt to locate him/her, the resident's location and activity status should be recorded as "unobservable". If the location of the last resident to be recorded cannot be be determined after a period of five minutes, then the resident's location and activity status should be recorded as "unobservable". The coder should check the resident sign out sheet and/or ask the staff where the resident is.

7) For interobserver scan sessions, observers must synchronize observations for each resident in order to maintain a high interobserver reliability. One method of synchronization is for one observer to announce the resident's initials and then say "mark" and then both observers will look at the resident and record his/her behavior.

8) During interobserver scan sessions, observers must always ensure that they have the same vantage point of the resident to eliminate any bias.

9) Two of the simplest ways observers can minimize their intrusiveness is to avoid eye contact and face-to-face interactions by maintaining a right angled position to the resident, and to record the resident's behavior out of his/her and other residents' line of sight.

**4. Ethogram**

**I. Location - The following list represents a division of the floor plan of McConnell Place North, Dickensfield and Lynnwood into functional areas.**

**McConnell Place North:**

1) Front entrance
2) Great room
3) Family dining room/kitchen
4) Library
5) Sitting area
6) House living/dining room
   - own
   - other
7) House kitchen
   - own
   - other
8) House hallway
   - own
   - other
9) Resident bedroom/bathroom
   - own
   - other
10) Horticulture room
11) Music room
12) Arts and crafts room
13) Entertainment room
14) North hallway
15) South hallway
16) West hallway
17) Northwest hallway
18) Great room hallways
19) Hair salon
20) Secure courtyards
21) Other location - Includes locations not listed above, such as administration area, stairwells, other residents' house, public washroom, central area hallway.

**Dickensfield:**

1) Entrance
2) Entrance hallway
3) Reception desk
4) Garden entrance

On each side of unit:

5) Washroom hallway
6) Utility/linen hallway
7) Big lounge hallway
8) Central dining area
9) Nursing station
10) Kitchen
11) Lounge - washroom hallway
12) Alcove - washroom hallway
13) Lounge - utility/linen hallway
14) Alcove - utility/linen hallway
15) Lounge - big lounge
16) Alcove - big lounge hallway
17) Resident bed/bathroom
18) Other- Includes locations not listed above, such as stairwells, administration area behind nursing station, storage, clean utility, linen, locked staff washrooms, laundry, television room, office and housekeeping.
19) Unobservable

**Lynnwood:**

1) Nursing station
2) Nursing station hallway
3) Elevator hallway
4) Washroom hallway
5) North hallway
6) South hallway
7) North hallway alcove
8) South hallway alcove
9) Day room
10) Balcony
11) Kitchen
12) Longhorn lounge
13) Resident room/bathroom
14) Family/resident room
15) Conference room
16) North exit
17) South exit
18) Other - Includes locations not listed above, such as the tub room, medication room, occupational therapy area, housekeeping room, public washrooms, stairs and elevators.

## II. Activities

**A) Null activity** - The resident is sleeping or awake with no evidence that his/her attention is focused on anything in his/her environment (i.e., "staring into space"). This item should be used if the resident is brought to an area to participate in an activity, but there is no evidence that he/she is attending to the activity in any way, or if he/she is sleeping during the activity. In order for the observer to select this category, the resident must be sleeping or his/her eyes must be "glazed over". If the resident is alert but his/her attention does not appear to be focused on anything in particular, the observer should select "Other-other" and note that the resident is alert but not focusing on anything in his/her environment.

**B) Communication**- The resident is communicating with another person. The resident may be speaking, gesturing, or visually attending to another person who is communicating with the resident. Communication also includes touching another person or persons, such as holding another person's hand. In addition, this item should be selected if the resident is receiving physical or verbal assistance. If this item is selected, the coder must indicate:

> **i) the presence of others** - The coder must indicate whether the resident is communicating with staff, visitors, other residents or other persons by circling "yes" or "no" beside each of these categories of persons.

This category should *not* be selected if the resident appears to be listening to a conversation between two or more people who are standing more than six feet away from the resident and are not attending to him/her visually.

**C) A.D.L. activity** - The resident is engaging, either independently or with assistance, in a self-care activity, including bathing, grooming, toileting, dressing, eating meals or ingesting medication. If this item is selected, the coder must indicate:

> **i) the presence of others** - The coder must indicate whether staff, other residents, visitors, or other persons are also participating by circling "yes" or "no" beside each of these categories of persons.

Note that if the resident is communicating with someone else while engaging in this activity, the observer should record the communication behavior by selecting the item "communication" under the category "activities" and indicating with whom the resident is communicating. For example, if the resident is combing his/her hair while a visitor is talking to him/her (including providing verbal or physical assistance), then the observer would select "A.D.L. activity" as well as "communication".

**D) Work activity** - The resident is performing a duty or task, such as serving tea at a birthday celebration, or sweeping the floor after lunch. If this item is selected, the coder must indicate:

> **i) the type of activity the resident is participating in** - The coder must describe briefly the nature of the task the resident is performing.
>
> **ii) the presence of others** - The coder must indicate whether staff, other residents, visitors, or other persons are present by circling "yes" or "no" beside each of these categories of persons. The coder should record the presence of another person if *and only if* he/she also is participating in the activity. For example, if the resident is tidying his/her room and another person is helping him/her, then the presence of this other person would be recorded by circling "yes" for resident, staff, visitor, or other, depending on who the other person is. However, if another person is in close proximity to the resident, but the/she is *not* involved in the activity, then the presence of this other person would *not* be

recorded.

Note that if the resident is communicating with someone else while engaging in this activity, *the observer should record the communication behavior as well* by also selecting the item "communication" under the category "activities" and indicating with whom the resident is communicating.

**E) Leisure activity** - The resident is participating, *directly* or *indirectly*, in a recreational or leisure activity. The resident is participating directly in the activity if he/she is using materials associated with the leisure activity and he/she is located in the functional area where the activity is taking place. The resident is participating indirectly in the activity if he/she is attending to the activity, but not using any materials associated with the activity. An example of indirect participation is a resident observing others engaged in a ball throwing activity, but not catching or throwing the ball him/herself. Thus, the observers should select this category if the resident is located in the functional space where the activity is taking place and he/she is neither sleeping nor "staring into space". Note that the observer should select this item when a resident is getting his/her hair done at the salon, and the salon is located within the facility/unit where observations are taking place. As well, the observer should select this category if the resident is eating a snack, though not a meal. If this item is selected, the coder must indicate:

**i) the type of activity the resident is participating in** - The coder must describe briefly the nature of the activity the resident is participating in, either directly or indirectly. For example, the coder would write "reading the newspaper", if the resident were reading a newspaper, or "attending tea party" is he/she were participating in a tea party.

**ii) the presence of others** - The coder must indicate whether staff, other residents, visitors or other persons are present by circling "yes" or "no" beside each of these categories of persons. The coder should record the presence of another person if he/she also is participating in (directly or indirectly) in the activity . For example, if the resident is watching television and another person is watching television and is in the same functional area as the resident, then the presence of this other person would be recorded by circling "yes" for resident, staff, visitor, or other, depending on who the other person is. However, if another person is in close proximity to the resident, but the the other person is *not* involved in the activity, then the presence of this other person would *not* be recorded.

This code should *not* be used if the resident is observing an activity from afar (that is, the resident is outside the functional area where the activity is taking place). Instead the coder should select the item "people watching" from the category of "other activity" as indicated below.

Note that if the resident is communicating with someone else while engaging in this activity, the observer should record the communication behavior by also selecting the item "communication" under the category "activities" and indicating with whom the resident is communicating.

**F) Other activity**- The resident is engaging in an activity that is not specified above.

The following sub-categories of "other activity" should be selected if they occur:

**a) Disruptive behaviors** - The resident is behaving in a manner that violates social norms. In addition, the behavior is harmful to the resident or others (such as striking another person), or is considered offensive or upsetting

by others (such as crying, moaning, or inappropriate sexual behavior). If this item is selected, the coder should provide a brief description of the behavior.

**i) the presence of others** - The coder must indicate whether staff, other residents, visitors or other persons are present by circling "yes" or "no" beside each of these categories of persons. The coder should record the presence of another person if he/she also is participating in the activity.

**ii) the type of activity the resident is participating in** - The coder must indicate briefly the nature of the activity the resident is participating in, either directly or indirectly.

Note that if the resident is communicating with someone else while engaging in this activity, the observer should record the communication behavior by also selecting the item "communication" under the category "activities" and indicating with whom the resident is communicating.

**b) Walking** - The resident is traversing a distance in either a typical upright manner or with the use of an aid, such as a walker. This item should be selected if a staff member is bringing the resident to an activity that is about to begin or is already in progress.

**i) the presence of others** - The coder must indicate whether staff, other residents, visitors or other persons are present by circling "yes" or "no" beside each of these categories of persons. The coder should record the presence of another person if he/she also is participating in the activity. For instance, the presence of another person would be recorded if the resident being observed is following or is being followed by another person. Note that the presence of another person should only be recorded if he/she is walking within 6 feet of the resident.

Note that if the resident is communicating with someone else while engaging in this activity, the observer should record the communication behavior by also selecting the item "communication" under the category "activities" and indicating with whom the resident is communicating.

**c) "People watching/looking out window"** - The resident is observing activities within the surrounding environment. This behavior includes observing others who are participating in an activity. Note that if the resident is observing an activity while walking, both "people watching" and "walking" would be checked off.

**i) the presence of others** - The coder must indicate whether staff, other residents,visitors or other persons are present by circling "yes" or "no" beside each of these categories of persons. The coder should record the presence of another person if he/she also is participating in the activity, and being in an alert state but not focusing on anything in particular.

Note that if the resident is communicating with someone else while engaging in this activity, the observer should record the communication behavior by also selecting the item "communication" under the category "activities" and indicating with whom the resident is communicating.

**d) Other** - The resident is engaging in an activity that is not specified above. Examples include transferring (e.g., from sitting to standing), and attempting to interact with the observers.

**i) the presence of others** - The coder must indicate whether staff, other residents, visitors or other persons are present by circling "yes" or "no" beside each of these categories of persons. The coder should record the presence of another person if he/she also is participating in the activity.

**ii) the type of activity the resident is participating in** - The coder must indicate briefly the nature of the activity the resident is participating in, either directly or indirectly.

Note that if the resident is communicating with someone else while engaging in this activity, the observer should record the communication behavior by also selecting the item "communication" under the category "activities" and indicating with whom the resident is communicating.

G) **Unobservable** - The resident is out of the coder's visual contact and, therefore, no decision can be made about the resident's activities. In addition, the observer should select this item if he/she knocks on the resident's door to determine whether the resident is in the room, and the resident interrupts his/her behavior to open the door. The item "unobservable" should be selected in this case because the observer is unable to determine the resident's behavior prior to knocking on the door.

# Appendix E

## Description of MPN and SCU Programming, Physical Environment, Staffing, Training, and Resident Admission and Discharge Criteria

## Characteristics of McConnell Place North (MPN)

### Physical Environment

MPN is a one-story complex that occupies 24,750 square feet of floor space. It was modelled after Woodside Place in Oakmount, Pennsylvania, with some modifications. The facility can be divided roughly into the administrative area, common spaces and three houses. Access to the administrative area and parking lot is secured.

The overall design principal was to create a facility that was not only secure, but residential in appearance and function. This principal is reflected in the absence of a nursing station, the choice of home-like furnishings throughout the facility, incandescent lighting whenever possible, carpeting in most of the common areas, and residential-style kitchens, tubs and bedrooms in each of the houses. In addition, the Capital Care Group wished to create a facility that would be stimulating without being overwhelming to residents with dementia. Thus, the hallways and outdoor paths provide opportunities for residents to wander as well as to rest and observe ongoing activities. Orienting cues, such as distinct color schemes for each of the houses and visual access to many of the common areas, were included in the design to assist residents with wayfinding.

Each house contains 10 private bedrooms, one semi-private room, a living room, and a kitchen with an adjacent half-bath, laundry and tub room with a standard residential bathtub. Each of the houses are identified by their dominant decorating color (blue, rose and green). The living rooms contain several small tables which can be moved to accomodate varying numbers of residents, staff, and visitors during mealtimes. The bedrooms flank a long, carpeted hallway which extends from the kitchen and dining areas. Each bedroom contains vinyl flooring that is woodlike in appearance and has an attached three-piece bathroom (sink, toilet and specialized shower). Residents and family are strongly encouraged to bring in their own furniture and personalized objects.

From the L-shaped hallway there is access to a three-piece bathroom which contains a standard residential bathtub. The end of the hallway also offers access to a secure outdoor area. The courtyard contains a variety of concrete paths which lead to each of the houses and four enteries to the common areas. Access to the courtyard is restricted after dark and during inclement weather only.

The central part of the building contains several common spaces, the largest being the "great room" which contains a fireplace and a large open space to accomodate large gatherings. Other common spaces include a family dining room, complete with kitchen for family get-togethers, a music room containing an organ and stereo equipment, an entertainment room with a large screen tv, a hair salon, a craft room, and a horticulture room. In addition, there are several hallways throughout the common space to accomodate wandering, as well as viewing of ongoing activities in the common spaces and outdoor activities.

**Program**

A primary objective of MPN is to provide an alternative model of care "that better maintains the clients' orientation, functional ability and social skills than the approach currently used in traditional settings" (Capital Care Group, 1996). More specifically, the programming is designed to support resident choice, independence, dignity, and privacy through individualized care. In contrast to traditional settings, daily routines are determined by each resident's needs and desires in as homelike a setting as possible. The focus of daily activities, including activities of daily living and leisure activities, is on maximizing the residents' independence and building on their remaining strengths. These goals are accomplished in several ways.The facility holds a no physical restraint policy and advocates a "rational use" of medications to manage behavior. In addition, staff members are instructed to familiarize themselves with the personalities and lifestyles of the residents. Booklets filled out by the residents and their loved ones regarding the residents' abilities, activities, hobbies, and preferences prior to onset and during the early stages of dementia are available for staff to read. This information assists staff in designing activity programs that are both flexible and supportive of resident preferences.

Along with structured programs, a variety of materials and options are available to foster resident-initiated activities that are characteristic of a home-like environment. For example, the outdoor courtyard contains a 1979 car in which residents may sit. At the time the study was conducted, one resident enjoyed making fresh bread on a regular basis. Also consistent with a homelike setting is the fact that all breakfasts and three lunches per week are made in each of the house kitchens and residents who desire so may assist with meal preparation. Moreover, staff join the residents for meals.

Family, friends and volunteers play a central role in the programming. They are encouraged to visit as often as they wish and/or participate in activities. As well, information between family members and staff is shared to facilitate personalized care, and family forums are held regularly to encourage family input into the facility's operations.

**Staffing and Staff Training**

In total, the residential facility employs 26 "resident companions" (RCs), 6 Licensed Practical Nurses (LPNs) one nursing manager, one leisure/volunteer coordinator, one clerk/receptionist and two housekeeping attendants. In addition, professional staff are available for consultation from a neighbouring long-term care facility. Physical and occupational therapists, dieticians and pharmacists are contracted out as required. During day shifts (0700-1500h), the "rose house" is staffed by one full-shift LPN and RC, while the "blue house" and "green house" are each staffed by one full-shift and one four-hour shift RC. During the swing shift (1200-2000h) there is an additional full-shift RC per house. In the evening (1500-2300h), each house is staffed by one full-shift RC, along with one LPN for the facility. During the night-shift (2300-0700h), the blue and green

houses each have one full-shift RC, while the rose house is staffed by one LPN.

This facility is distinguished by the fact that staff are hired on the basis of interest in working with residents with Alzheimer disease and contiguity with the program's philosophy, with minimal emphasis on prior work history. The resident companions are responsible for personal care of the residents, as well as recreational programs, laundry and light housekeeping within the houses.

Prior to the opening of the facility, the staff participated in a specially designed 6-day orientation program, as outlined in Appendix E. Orientation addressed a variety of topics including models of care, the philosophy of care and overarching goals, the disease process and understanding resident behaviors, communicating with residents, problem solving, basic care as well as housekeeping and maintenance issues. Education and training sessions continued periodically throughout the duration of the study.

**Admission and Discharge Criteria**

Criteria for admission include having needs that cannot be met in the community, as determined by the local continuing care assessment and placement agency, and a diagnosis of Alzheimer disease or related dementia, as determined by a geriatrician. Residents must cooperate with infection management procedures and have stable medical status, although basic procedures such as wound care and diabetic monitoring are acceptable, so long as they can be carried out without the need for additional staff. As well, residents must be able to communicate in some form, such as the use of gestures, and eat meals with some assistance or supervision, although the maximum permitted level of assistance is not specified. Other required functional abilities include the ability to perform activities of daily living with the assistance of no more than one caregiver, and the ability to ambulate with minimal assistance and/or use of a cane or walker. Residents should be able to "participate in activities and benefit from the programs" as well, although an operational definition of "benefit from programs" is not provided. Acceptable behaviors include wandering, hoarding, rummaging and aggressive behavior, so long as the aggressive behavior is predictable and the risk posed to others is minimal. Prospective residents displaying inappropriate sexual behaviors are considered on a case by case basis. Smoking is not permitted and residents who require more than 30 minutes of behavioral management interventions within a 24-hour period are not acceptable. Along with these admission criteria for residents, family members must agree with the facility's philosophy of care and agree to their loved ones' discharge when they no longer meet the stated admission criteria.

Residents are discharged from the facility when they require more than one staff member to assist with functional activities, such as toileting, transferring, eating, and dressing, if their medical status becomes unstable, or if their behaviors consistently require more than 30 minutes of staff intervention over a 24 hour period.

## Characteristics of the Special Care Units (SCUs)

### Physical Environment

The primary objective of the SCU design is to enhance the residents' ability to interpret the environment by providing a climate which is safe, supportive and low in stress. According to the SCU manual, the basic requirements of the SCUs are that they are self-contained with secured doors or security systems and minimal through traffic.

Special Care Unit A is located on the ground level of a three-story continuing-care facility. Unlike MPN, this unit was not originally designed spefically for residents with dementia. The secured unit occupies 22,760 square feet of floor space and consists of two triangular "pods", each of which contain 14 private and 6 double occupancy resident rooms. Each room contains a two-piece bathroom which includes a bathroom and sink. Curtains are drawn around the beds for privacy in the double-occupancy rooms. Residents are permitted to bring in their own furnishings, such as chairs, blankets and personal mementos, though many of the rooms are starkly decorated.

In the center of each pod is a large, open dining area where residents eat their meals and often sit when no activities are in progress. The center also contains a kitchen area and a nursing station, both of which face the central dining area. Resident bedrooms open directly on to one of three long hallways which form the border of the pod. Two of the three hallways contain a small two-person nook in which residents can rest. A small lounge opens onto one hallway and has a large window with a view of the outdoor grounds. Another hallway has a larger lounge where residents can watch tv or view the street activity from the large window which faces the main street.

The pods are distinguished from each other by the predominant colors (orange vs. blue) of the chairs, table tops and countertops. In addition, the floors of the main hallways are marked with a continuous wide strip of color which form a "track" around the central dining area. The pods are joined together by a central hallway and residents are free to wander between them, though they are brought back to the pod where their bedrooms are located when they require care and when meals are served.

Access to a secured courtyard is available from the centre of the unit. However, the exit door to the courtyard was usually locked during the observation period, regardless of the weather or time of day. Exits off the unit and to the courtyard are controlled with a keypad in which the correct sequence of numbers must be punched.

Several efforts have been made to create a more homelike atmosphere. Oversized chairs can be found in the television lounge, and cabinets in the central dining area of one pod display china and knick-knacks. However, the unit was originally designed for acute care. Consequently, long hallways with shiny floors, brick and cement walls, and vinyl and steel tables and chairs all contribute toward the unit's "institutional"

character.

Special Care Unit B contains 50 beds and is located on the second floor of a three story continuing-care facility. Five quadruple-occupancy, 13 double-occupancy and four single-occupancy rooms make up the 50 beds. The unit can be divided roughly into a central area and two "wings". The nursing station is located in the middle of the unit. The central location of the nursing station allows staff to monitor resident activities in the hallways of both wings, which are located to the right and left of the station, and in the central dining/activity area, which is located directly in front of the station. In addition, the elevators and one set of exit stairs are located immediately to one side of the nursing station, permitting a view of potential absconders. Residents do not have access to the outdoors, although they do have access to a balcony located off the dining area which overlooks the facility's atrium where many activities, such as concerts and tea parties occur. The central dining/activities area is large enough to accomodate all residents during mealtimes, and to hold unit activities such as dances and exercise classes. The unit also contains a staff conference room, a tub room where residents are bathed, a lounge with a large screen television, and a "quiet room" where residents and visitors may go if they desire privacy, although this room was usually filled with chairs and equipment during the observation period. Each wing consists of resident rooms which open onto a long hallway. Exit stairs are located at the end of each hallway. All stairway and elevator exits are controlled with a keypad in which the correct sequence of numbers must be punched.

Like the other SCU, this unit was retrofitted to be a special care unit. It appears "institutional" with its long corridors and flourescent lighting, although bookshleves have been installed in the lounge and pictures and original art hung on the wall to produce a more homelike atmosphere. Like the other SCU, residents may bring in their own furniture items and mementos to personalize their rooms. Nevertheless, most rooms contain little, if any, of these items.

**Program**

The emphasis of the SCU programming philosophy is on merging traditional discipline-specific boundaries to provide residents with individualized, holistic care. For instance, the SCU manual states that care plans should include specific approaches for managing individual behaviors and should be developed and implemented by all team members (Capital Care Group, 1994). Although all staff are encouraged to participate in programming, the manual states that therapies should be planned by persons with training and expertise with clearly defined goals, objectives and evaluation measures. In SCU A, a recreation therapist visits the unit each weekday morning for two hours. At this time, residents are encouraged to participate in activities such as dancing, reminiscing or sing-a-longs. In SCU B, morning and afternoon activities were provided by a recreation and/or occupational therapist, such as baking, footcare, dancing and bingo during time 1

data collection. However, occupational therapy activities were terminated between time 1 and time 2 data collection periods. Consequently, structured activites were rarely observed during the second data collection period.

Another stipulated goal of the SCUs is to focus on the residents' strengths and capacity for independence while recognizing their unique needs. However, the manual does not state how this goal should be accomplished, other than by focusing on abilities that remain intact.

In addition to resident care, part of the SCU programming is to support family members while their loved ones deteriorate and to encourage their participation in caring for their relatives. However, no specific criteria are provided for accomplishing this goal, other than by providing ongoing education.

**Staffing and Staff Training**

Eleven full-time staff and 31 part-time staff work on SCU A. Day staff consist of one LPN, one nurse manager and two nursing assistants on each pod, along with one RN who covers both pods on the unit, as well as one other unit. One LPN and two NAs (one full-time shift NA and one five-hour shift NA) are present on each pod for the evening shift. As in the day shift, there is one RN who works on both pods. During the night shift, one of the pods is staffed by a NA while the other side is staffed by a LPN. In addition, a NA "floats" between both pods as well as to another unit to relieve staff for breaks. One nurse manager for the entire building is also present during the night shift. The unit is also staffed by a recreation therapist who organizes a "breakfast club" twice per week, and a recreation attendant who provides activities for residents for two hours each weekday morning. Along with paid staff, one volunteer assists with feeding residents during lunch twice per week.

SCU B employs 11 full-time staff, including 2 nurse managers, one occupational therapist, three LPNs and five NAs, along with 32 part-time staff. Day-shift staff include two Resident Care Managers during the week, two LPNs and six NAs (three full-time and three part-time). During the evening shift, the unit is staffed by one RN, one part-time and one full-time LPN, as well as one full-time and two part-time NAs. The night-shift staff consist of one LPN and two NAs, one of whom is shared with another unit. In addition, two volunteers assist with feeding during the week. During the time 1 data collection, a recreation attendant provided morning and afternoon activities during the week; however, this position was omitted in between the time 1 and time 2 data collection periods.

In both SCUs, other staff such as occupational therapists, physical therapists and dieticians are called in for consultation when required.

Initially, all nursing staff on the SCUs received a one-day orientation session which addressed topics including the disease process, assessment, philosophy and values of SCUs, behaviour management and interpersonal relationships. Recently-hired

nursing staff tend to receive "hands-on" training only.

**Admission and Discharge Criteria**

Prior to admission to either of the SCUs, all applicants are assessed using the Client Assessment Review from Central Assessment and Placement Services in Edmonton, Alberta. According to the admission and discharge protocol outlined in the SCU manual, the Client Assessment Review should indicate a decline in the residents' awareness, orientation, memory and judgement and decision- making ability. In addition, prospective residents should display many of the following behaviors: hoarding, rummaging, wandering, ingestion of foreign substances, smoking, sexually oriented behavior, and social interaction or involvement in leisure activity. Admission criteria also require that residents be mobile, either by walking or by propelling themselves in wheelchairs. Exclusion criteria require that residents not engage in suicide ideation or substance abuse. Moreover, applicants may be refused admission if they are severely agitated or aggressive or are likely to injure themselves and/or others. The applicants' overall level of Activities of Daily Living is also taken into consideration, although no specific level of functioning is specified in the manual.

Similar to the MPN guidelines, residents are discharged from the SCUs when they "no longer benefit from the specialized environment and approach". Discharge criteria include physical decline such that residents are no longer able to walk by themselves or propel themselves in wheelchairs. In addition, residents are discharged if they display behaviors that disrupt the unit and affect the safety of others.

# Appendix F

## Outline of MPN Staff Orientation Program

*The* CAPITAL CARE *Group*
CAPITAL CARE ALZHEIMER CENTRE

## STAFF ORIENTATION
## DAY ONE

## MONDAY, JULY 17, 1995

| | | |
|---|---|---|
| 0800 - 0830h | Registration and Handout of Packets, Pictures Housekeeping Items | |
| 0830 - 0835h | Welcome | *by Connie Wark* |
| 0835 - 0845h | The Capital Care Group Video | |
| 0845 - 0900h | Education Evaluation | *by Corrinna Andiel* |
| 0900 - 0945h | Welcome to The Capital Care Group and Alzheimer Centre, Organizational Chart | *by Susan Paul* |
| 0945 - 1005h | Coffee | |
| 1005 - 1105h | Models of Care | *by Doris Milke* |
| 1105 - 1150h | Introduction to Human Resources | *by Brian Pearson* |
| 1150 - 1205h | Customer Services | *by Connie Bleau* |
| 1205 - 1230h | Meet Your Co-Worker (interactive activity) | *by Connie Bleau* |
| 1230 - 1330h | Lunch & Signing Up for Benefits | *by Brain Pearson* |
| 1330 - 1415h | Tour of Centre | |
| 1415 - 1450h | Getting to Know Each Other<br>Break Into Groups | |
| 1450 - 1500h | Question & Answer | |
| 1500 - 1515h | Union Representatives | *by Yvette Yates (CUPE)*<br>*(GUILD)* |

*The* CAPITAL CARE *Group*
CAPITAL CARE ALZHEIMER CENTRE

# STAFF ORIENTATION
# DAY TWO

## TUESDAY, JULY 18, 1995

| | | |
|---|---|---|
| 0800 - 0815h | Education Evaluation | *by Corrinna Andiel* |
| 0815 - 0845h | Fire & Safety<br>Garden / Lawn Care / Snow<br>Maintenance Issues | *by Connie Wark* |
| 0845 - 0910h | Housekeeping / Carpets / Garbage | *by Lilly Dawson* |
| 0910 - 0940h | W.H.M.I.S. | *by Connie Wark* |
| 0940 - 1000h | Coffee | |
| 1000 - 1030h | Infection Control | *by Nat Mitchell* |
| 1030 - 1045h | CSD Supplies & First Aid | *by Dorothy Gonkowicz* |
| 1045 - 1245h | Food Management | *by Laura Tkach / others* |
| 1245 - 1305h | Back Care / Wellness | *by Jane Herrmann* |
| 1305 - 1320h | Heimlich | *by Connie Wark* |
| 1320 - 1350h | Laundry / Incontinence | *by Attends Representative* |
| 1350 - 1410h | Coffee | |
| 1410 - 1455h | Phones, etc. | *by Ed Tel Representative*<br>*Diana Unger* |
| 1455 - 1600h | Rotations / Vacations / Changes, etc.<br>Staff Association | *by Connie Wark*<br>*by Carol Morris* |

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**STAFF ORIENTATION**
**DAY THREE**

**WEDNESDAY, JULY 19, 1995**

**LPN (Alzheimer Care Centre Great Room)**

| | |
|---|---|
| **0800 - 0845h** | Glucoscan<br>*by Dorothy Gonkowicz* |
| **0845 - 1100h** | Pharmacy<br>*by Bette Matheson* |
| **1100 - 1200h** | Conferencing & Consults<br>*by Connie Wark* |

**Resident Companion (CCD Auditorium)**

| | |
|---|---|
| **0800 - 1200h** | Medication Administration:<br>*by Michelle Zielinski and Wendy Tanaka-Collins* |

** Held in the ** Capital Care Dickinsfield Auditorium, 3rd Floor

*The* CAPITAL CARE *Group*
CAPITAL CARE ALZHEIMER CENTRE

**STAFF ORIENTATION**
**DAY FOUR**

**THURSDAY, JULY 20, 1995**

| | | |
|---|---|---|
| **0800 - 1000h** | Disease Process | *by Bob McKim* |
| **1000 - 1020h** | Stretch / Coffee | |
| **1020 - 1220h** | What the Symptoms Mean | *by Gill Murphy* |
| **1220 - 1300h** | Lunch | |
| **1300 - 1500h** | Understanding Behaviors | *by Deb Kryzanowski* |
| **1500 - 1515h** | Coffee | |
| **1515 - 1600h** | Role of the Leisure/Volunteer Coordinator | *by Roswitha Schmitt-Blouin* |

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## STAFF ORIENTATION
## DAY FIVE

### FRIDAY, JULY 21, 1995

| | | |
|---|---|---|
| 0800 - 0945h | Family Perspective (panel) | *3 - 4 family members*<br>*Jim Thomson* |
| 0945 - 1000h | Coffee | |
| 1000 - 1200h | Communications Techniques &<br>Interaction with Individual Residents | *by Gill Murphy*<br>*Jim Thomson* |
| 1200 - 1245h | Lunch | |
| 1245 - 1430h | Interpersonal Relationships and<br>Team Building | *by Bob McKim /*<br>*Committee Members* |
| 1430 - 1445h | Coffee | |
| 1445 - 1600h | Problem Solving / Conflict Resolution /<br>Discussion | *by Bob McKim /*<br>*Committee Members* |

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# STAFF ORIENTATION
# DAY SIX

## MONDAY, JULY 24, 1995

| | | |
|---|---|---|
| 0800 - 0830h | Overarching Goals | *by Bob McKim* |
| 0830 - 0900h | Mission / Purpose | *by Bob McKim* |
| 0900 - 0930h | Philosophy | *by Connie Wark* |
| 0930 - 0945h | Coffee | |
| 0945 - 1015h | Value Statement | *by Gill Murphy* |
| 1015 - 1130h | Goals 1, 2, 3, 4 | *by Bob McKim* |
| 1130 - 1200h | Evaluation | *by Connie Wark* |
| 1200 - 1300h | Lunch | |
| 1300 - 1415h | Practical Scenarios | *by Gill Murphy / Connie Wark Brenda Thiru-Chelvam* |
| 1415 - 1445h | Coffee | |
| 1445 - 1600h | Putting It All Together | *by Connie Wark* |

*The* CAPITAL CARE *Group*
CAPITAL CARE ALZHEIMER CENTRE

# STAFF ORIENTATION
# DAY SEVEN

## TUESDAY, JULY 25, 1995

| LPN (Alzheimer Care Centre Great Room) | | Resident Companion (CCD Auditorium) | |
|---|---|---|---|
| 0800 - 1200h | Doctors: Contacting & Orders<br>Transfers<br>Falls<br>Leadership<br>Probationary Period<br>*by Connie Wark* | 0800 - 1200h | Medication Administration:<br>*by Michelle Zielinski and Wendy Tanaka-Collins*<br><br>** Held in the **<br>Capital Care Dickinsfield Auditorium, 3rd Floor |
| 1200 - 1300h | Lunch | | |
| 1300 - 1345h | Tele Care | | |
| 1345 - 1400h | Evaluation | | |
| 1400h | Orientation Wrap-Up Celebration | | |

# Appendix G

## Schedule of Behavioural Observations

## Coding Schedule for Behavioural Observations - MPN

| Monday | Tuesday | May 1 Wednesday | May 2 Thursday | May 3 Friday |
|---|---|---|---|---|
| | | 9:00 | 9:00 | |
| | | 10:00 | 10:00 | CONF. |
| | | 11:00 | 11:00 | |
| | | 1:00 | **1:00** | |
| | | 2:00 | **2:00** * | |
| | | 3:00 | **3:00** * | |
| | | **4:00** * | 4:00 | |
| | | **6:00** * | 6:00 | |
| | | **7:00** | 7:00 | |

| May 6 Monday | May 7 Tuesday | May 8 Wednesday | May 9 Thursday | May 10 Friday |
|---|---|---|---|---|
| **9:00** | 9:00 | | | **9:00** |
| **10:00*** | 10:00 | Practice at DK | | **10:00*** |
| **11:00*** | 11:00 | | | **11:00*** |
| 1:00 | **1:00*** | | | 1:00 |
| 2:00 | **2:00** | | | 2:00 |
| 3:00 | **3:00*** | | | 3:00 |
| 4:00 | 4:00 | | | 4:00 |
| 6:00 | 6:00 | | | 6:00 |
| 7:00 | 7:00 | | | 7:00 |

**Bold print** = Doris coding

* = reliability checks

## Coding Schedule for Behavioural Observations - DK

| May 13 Monday | May 14 Tuesday | May 15 Wednesday | May 16 Thursday | May 17 Friday |
|---|---|---|---|---|
| **9:00** | 9:00 | 9:00 | 9:00 | **9:00** |
| **10:00*** | 10:00 | 10:00 | 10:00 | **10:00*** |
| **11:00*** | 11:00 | 11:00 | 11:00 | **11:00*** |
| 1:00 | **1:00** * | 1:00 | **1:00** | 1:00 |
| 2:00 | **2:00** | 2:00 | **2:00** * | 2:00 |
| 3:00 | **3:00** * | 3:00 | **3:00** * | 3:00 |
| 4:00 | 4:00 | **4:00** * | 4:00 | 4:00 |
| 6:00 | 6:00 | **6:00** * | 6:00 | 6:00 |
| 7:00 | 7:00 | **7:00** | 7:00 | 7:00 |

**Bold print** = Doris coding

* = reliability checks

## Coding Schedule for Behavioural Observations - LN

| May 27 Monday | May 28 Tuesday | May 29 Wednesday | May 30 Thursday | May 31 Friday |
|---|---|---|---|---|
| **9:00** | 9:00 | 9:00 | 9:00 | **9:00** |
| **10:00*** | 10:00 | 10:00 | 10:00 | **10:00*** |
| **11:00*** | 11:00 | 11:00 | 11:00 | **11:00*** |
| 1:00 | **1:00** * | 1:00 | **1:00** | 1:00 |
| 2:00 | **2:00** | 2:00 | **2:00** * | 2:00 |
| 3:00 | **3:00** * | 3:00 | **3:00** * | 3:00 |
| 4:00 | 4:00 | **4:00** * | 4:00 | 4:00 |
| 6:00 | 6:00 | **6:00** * | 6:00 | 6:00 |
| 7:00 | 7:00 | **7:00** | 7:00 | 7:00 |

Practice for LN the week of the 21st (except Monday because is a holiday)

**Bold print** = Doris coding

* = reliability checks

## Coding Schedule for Behavioural Observations - MPN

| Nov 4 Monday | Nov 5 Tuesday | Nov 6 Wednesday | Nov 7 Thursday | Nov 8 Friday |
|---|---|---|---|---|
| 9:00 | **9:00** | 9:00 | 9:00 | **9:00** |
| 10:00 | **10:00*** | 10:00 | 10:00 | **10:00*** |
| 11:00 | **11:00*** | 11:00 | 11:00 | **11:00*** |
| **1:00** * | 1:00 | 1:00 | **1:00** | 1:00 |
| **2:00** | 2:00 | 2:00 | **2:00** * | 2:00 |
| **3:00*** | 3:00 | 3:00 | **3:00** * | 3:00 |
| 4:00 | 4:00 | **4:00** * | 4:00 | 4:00 |
| 6:00 | 6:00 | **6:00** * | 6:00 | 6:00 |
| 7:00 | 7:00 | **7:00** | 7:00 | 7:00 |

**Bold print** = Doris coding

* = reliability checks

## Coding Schedule for Behavioural Observations - DK

| Nov 18 Monday | Nov 26 Tuesday | Nov 20 Wednesday | Nov 21 Thursday | Nov 22 Friday |
|---|---|---|---|---|
| **9:00** | 9:00 | 9:00 | 9:00 | **9:00** |
| **10:00*** | 10:00 | 10:00 | 10:00 | **10:00*** |
| **11:00*** | 11:00 | 11:00 | 11:00 | **11:00*** |
| 1:00 | **1:00** * | 1:00 | **1:00** | 1:00 |
| 2:00 | **2:00** | 2:00 | **2:00** * | 2:00 |
| 3:00 | **3:00** * | 3:00 | **3:00** * | 3:00 |
| 4:00 | 4:00 | **4:00** * | 4:00 | 4:00 |
| 6:00 | 6:00 | **6:00** * | 6:00 | 6:00 |
| 7:00 | 7:00 | **7:00** | 7:00 | 7:00 |

Practice for DK the Nov. 10, 11, 12

**Bold print** = Doris coding

* = reliability checks

## Coding Schedule for Behavioural Observations - LN

| Dec 2 Monday | Dec 3 Tuesday | Dec 4 Wednesday | Dec 5 Thursday | Dec 6 Friday |
|---|---|---|---|---|
| **9:00** | 9:00 | 9:00 | 9:00 | **9:00** |
| **10:00*** | 10:00 | 10:00 | 10:00 | **10:00*** |
| **11:00*** | 11:00 | 11:00 | 11:00 | **11:00*** |
| 1:00 | **1:00** * | 1:00 | **1:00** | 1:00 |
| 2:00 | **2:00** | 2:00 | **2:00** * | 2:00 |
| 3:00 | **3:00** * | 3:00 | **3:00** * | 3:00 |
| 4:00 | 4:00 | **4:00** * | 4:00 | 4:00 |
| 6:00 | 6:00 | **6:00** * | 6:00 | 6:00 |
| 7:00 | 7:00 | **7:00** | 7:00 | 7:00 |

Practice for LN Nov 27, 28, 29

**Bold print** = Doris coding

* = reliability checks

# Appendix H

## Behavioural Observations of Couples Living at McConnell Place North

## Use of Space

A comparison of Table 14 and Table 24 indicates MPN couples can be distinguished from the rest of the residents at time 1 by the relatively large proportion of scans in which they were found in their own rooms. Residents living in the centre without their spouses were observed in their own rooms for approximately one-third of the scans, in contrast to the couples, who were observed in their own rooms for at least twice the proportion of scans. The proportion of scans in which couple 2 was observed in their own room at time 2 was very similar to that of time 1 (.88 versus .84 for time 1 and time 2, respectively). Whereas couple 2 showed little change from time 1 to time 2, the "new" couple 1 was observed in their own and each other's rooms for a much smaller proportion of scans at time 2 (p=.17) than at time 1 (p=.64).

Table 24. Mean proportion of scans MPN couples were found in specific spaces within their own houses.

| | Couple 1 | | Couple 2 | |
|---|---|---|---|---|
| Location | Time 1 | Time 2 | Time 1 | Time 2 |
| Living/dining room | .20 | .31 | .01 | .07 |
| Kitchen | .01 | .03 | .02 | .00 |
| Hallway | .00 | .03 | .07 | .09 |
| Own room | .64 | .17 | .88 | .84 |
| Other resident's room* | .00 | .06 | - | - |

*This location applies to the "new" couple 1 at time 2 only because each member of the couple had his/her own room.

Given the relatively large proportions of scans couples were observed in their own rooms at time 1, it is not surprising they were observed in the common spaces of the centre for far smaller proportions of scans than the rest of the MPN residents. This is

particularly true for couple 2, who was observed in the great room for two percent of the scans, and nowhere else within the centre's common spaces. Couple 1 was observed in the common areas for a total of 12% of the scans, and in half (six percent) of these scans they were found in the northwest corridor. In addition, couple 1 was observed in the great room, music room and horticulture rooms, although for only three, two and one percent of the scans, respectively.

There was little change from time 1 to time 2 with regard to the proportion of scans couple 2 was observed in common areas. In fact, at time 2 they were not observed in any of the common areas of MPN. In contrast, the "new" couple 1 was observed in the common spaces for a much larger proportion of time at time 2 than at time 1. In particular, at time 2 the "new" couple 1 was observed in the great room for nearly 12 ($p=.23$) times the proportion of scans that the original couple at time 1 was. In addition, they were observed in a greater variety of common area spaces compared to couple 1 at time 1, including the northwest ($p=.03$), west ($p=.02$) and south ($p=.01$) corridors, entertainment room ($p=.04$), horticulture room ($p=.02$), sitting areas ($p=.01$), and hair salon ($p=.01$).

### Participation in A.D.L.s, Daily Chores, Leisure and Other Activities

At time 1, the observers found it difficult to record the couples' behaviours without being unduly intrusive because these residents were in their own rooms for relatively large proportions of the observations. In fact, couple 1's behaviours were recorded as unobservable for eight percent of the scans, and couple 2's behaviours were unobservable for seven percent of the scans, in contrast to the rest of the residents, whose behaviours were recorded as unobservable for less than two percent of the scans. Nevertheless, it is evident that the couples differed from the other residents not only in terms of the spaces they occupied, but also the activities they engaged in. Moreover, the couples' behaviours differed from each other. Essentially, couple 1 can be distinguished from the other residents at time 1 by the relatively large proportion of scans

in which they were inactive. Figure 4 illustrates that at time 1, for instance, couple 1 was inactive in three times the proportion of scans that residents not living with their spouses were. The couple also was unlike the other residents in that they were never observed walking and they communicated in the absence of a concomitant activity for smaller proportions of scans (p=.03) than the other residents (p=.11). However, they did not differ from the other residents in the proportion of scans in which they were observed participating in leisure activities, as seen in Figure 4.

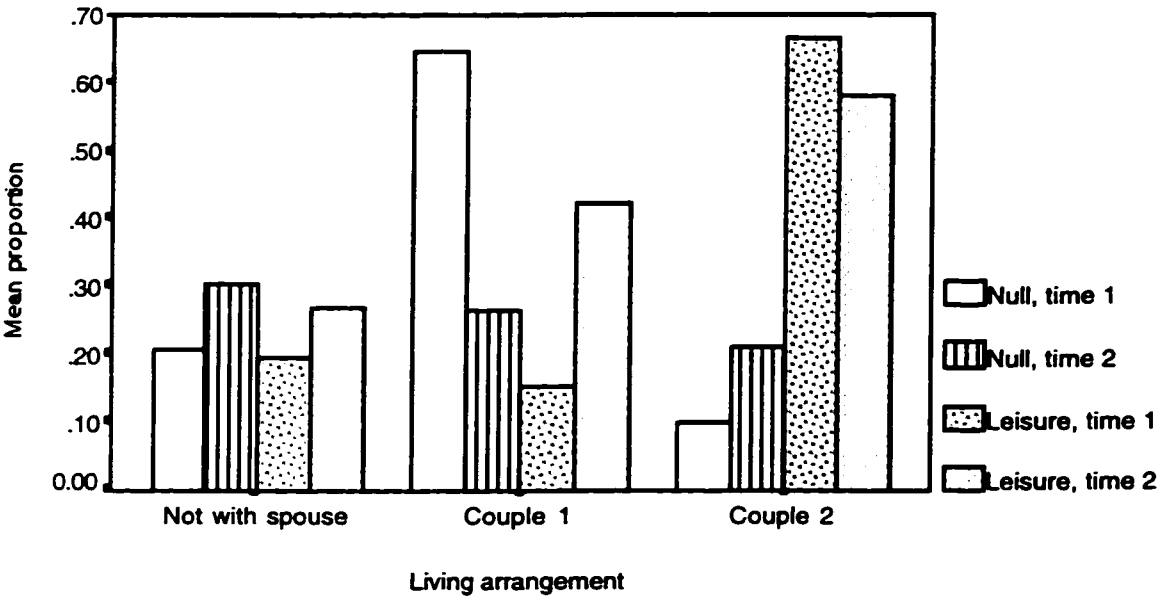
In contrast to couple 1, couple 2 can be distinguished from the other residents at time 1 by the relatively large proportion of scans in which they were involved in leisure activities, as illustrated in Figure 4. Unlike all other residents, leisure activities accounted for as much as two-thirds of scans for couple 2. In addition, Figure 4 shows that couple 2 was observed in null behaviours for smaller proportions of scans than residents not living with their spouses in the centre. Communication as the sole activity also accounted for a smaller proportion of scans (p=.04) than for the other residents (p=.11), as did walking (p=.10 and p=.16, for couple 2 and residents not living with their spouses, respectively).

As summarized in Figure 4, the behaviours of the new couple 1 differed greatly from the behaviours of the original couple 1. The proportion of scans in which couple 1 was observed participating in leisure activities increased sharply, while the proportion of scans in which they were observed inactive decreased substantially and approached a value close to that of the rest of the residents in the centre. Interestingly, at time 2 the original member of this pair engaged in leisure activities for a greater proportion of scans (p=.36) and was inactive for a smaller proportion of scans (p=.33) than the couple at time 1. The new member of the couple was even more active, engaging in leisure activities for a greater proportion of scans (p=.49) and inactive for a smaller proportion of scans (p=.20) than the other member of the couple.

Unlike couple 1, couple 2's activities changed very little from time 1 to time 2. As was the case at time 1, couple 2 engaged in leisure activities for more than half the scans

(p=.58). The proportion of scans in which they were recorded walking remained stable (p=.09), as did the proportion of scans in which they were communicating (p=.04), and

Figure 4. Mean proportion of scans couples and residents not living with spouses were inactive and participating in leisure activities.



unobservable (p=.07). However, the proportion of scans in which they were observed in null behaviour doubled (p=.21) from that of time 1. Nevertheless, this proportion remained lower than that of the rest of the residents at time 2.

### Participation in Specific Types of Daily Chores and Leisure Activities

When couple 1 engaged in leisure activities at time 1, they were found reading (p=.06), attending religious ceremonies (p=.04), snacking (p=.02), and watching television (p=.02). At time 2, they became more like the other residents with regard to the variety of activities they engaged in, including watching television/movies (p=.09), reading (p=.07), attending musical performances (p=.04), exercising (p=.02), snacking (p=.02), playing bingo (p=.02), bowling, (p=.02), attending centre tea parties (p=.02), and playing ball (p=.01).

For couple 2, leisure activities consisted almost exclusively of watching television (p=.62) and occasionally reading (p=.02) or attending centre tea parties (p=.02) at time 1. At time 2, they were observed watching television (p=.51) for a majority of scans, and engaging in some "other" type of leisure activity (p=.06) or reading (p=.01) for far smaller proportions of scans.

### Communication

At time 1, both couples were observed communicating even less than the other MPN residents, with couple 1 observed communicating in only five percent of the scans, and couple 2 observed communicating in 11% of the scans. At time 2, however, couple 1 was observed communicating in five times as many scans as in time 1 (p=.27). In contrast, couple 2's communication habits changed very little, as they were observed communicating in nine percent of the scans.

## Presence of Others

Couples 1 and 2 differed greatly from each other with respect to with whom they engaged in activities. Despite sharing the same room, couple 1 was observed engaging in activities alone (that is, not with each other or anyone else) in nearly three-quarters (p=.72) of the scans, and with other residents (including each other) in less than one-fifth (p=.18) of the scans. In addition, at least one staff member was recorded as present in eight percent of the scans, "other" persons (e.g., volunteers, clergy) in four percent of the scans, and visitors in two percent of the scans. In contrast, couple 2 engaged in activities alone for only one-fifth (p=.18) of the scans, but with other residents (including each other) in as much as three-quarters (p=.74) of the scans. Like couple 1, couple 2 engaged in activities with other people, including staff, others and visitors, though for only two percent of the scans in each case.

Similar to most of couple 1's behavioural data presented thus far, results from time 2 observations differ greatly from those at time 1. At time 2, for instance, couple 1 was observed engaging in activities alone for only one-third (p=.33) of the scans, and with other residents (including each other) in more than half (p=.58) the scans. In addition, at least one staff member was recorded as present for slightly more than one-tenth (p=.12) of the scans, while at least one visitor was present in only two percent of the scans. In contrast, couple 2 appeared to be more isolated at time 2 than at time 1, engaging in activities with other residents for 60% of the scans, and alone for the remaining one-third (p=.33).

## Communication With Others

Unlike the other MPN residents, the residents comprising couple 1 were not observed communicating with residents (including each other) in any of the scans. However, they were observed communicating with at least one other staff member in five percent of the scans, as well as at least one visitor in two percent of the scans. In contrast, couple 2

was never observed communicating with staff members, although they were observed communicating with residents in 10% of the scans and "other" persons in two percent of the scans.

At time 2, patterns of communication changed dramatically for couple 1, but remained relatively unaltered for couple 2. Similar to the MPN residents not living with their spouses, couple 1 was observed communicating with other residents ($p=.23$) for a greater proportion of time than with anyone else, but communicating with staff ($p=.04$) for only a small proportion of time. Couple 2, on the other hand, was observed communicating with other residents in nine percent of the scans, with at least one visitor in two percent of the scans, and never with staff.