EVALUATION of the ROYAL OTTAWA HOSPITAL GERIATRIC PSYCHIATRY IN-PATIENT UNIT

by

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ABSTRACT

Economic and political forces have identified a need to efficiently and adequately provide clinical assessments of psychiatric interventions so that treatment impacts may be determined and to develop predictive models of both utilization and outcomes of interventions. These needs are particularly timely for geropsychiatry in-patient programs that are serving a growing and more impaired patient population with fewer resources and briefer admissions. Moreover, caregiver burden has assumed greater importance as families are expected to assume more responsibility for providing care to their elderly relatives. These issues, coupled with significant gaps in the current state of knowledge, highlighted the need for evaluations of geropsychiatric in-patient programs. This evaluation made use of three methodologies designed to address these and other issues on the ROH Geriatric Psychiatry In-Patient Unit. Reviews of clinical records and archival data served to characterize and contrast current geropsychiatric in-patients and patients who were treated a decade ago. A pretest-posttest-follow-up design was used to compare treatment impacts for demented and non-demented patients and to identify variables that predicted treatment outcome and length-of-stay. Caregiver surveys, administered upon the patients' admission to hospital and one month following discharge, assessed caregiver burden and served to identify the differential impacts of treatment for caregivers of patients with and without a dementia and to identify the types of professional supports that predicted change in caregiver burden. Results of this evaluation indicated that despite having complex clinical profiles, geropsychiatric in-patients improved significantly over the course of treatment clinically, functionally, and in self-rated quality of life. Further, patients were generally satisfied with treatment, although some areas were highlighted for quality improvement. Caregiver burden was also reduced following hospitalization. As expected, patients with dementias and their caregivers experienced fewer improvements over time. Finally, patient characteristics explained 24% of the variability in treatment outcome and 22% of the variability in length-of-stay. Although the non-experimental designs used in this evaluation do not allow for causal inferences to be made, results provided herein highlight the feasibility of assessing treatment impacts of geropsychiatric hospitalization and offer pragmatic guidance to care providers of elderly seriously mentally ill in-patients.

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Chapter 1. ESTABLISHING THE NEED FOR EVALUATION OF GEROPSYCHIATRY IN-PATIENT PROGRAMS

The field of psychiatry is facing growing pressure for evaluations of treatment outcomes[1]. According to deBruyn (1994), this pressure comes from many sources. To begin, accrediting bodies, such as the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) in the US, and the Canadian Council on Health Services Accreditation (CCHSA) in Canada have incorporated many evaluative processes into their accreditation procedures (e.g. utilization review, risk management). A second source of pressure comes from funders. In Canada, governments have legislated to set standards and to control and cut costs. The result has been a shift toward funding hospitals for the numbers and types of cases they serve, rather than providing an annual global budget[2]. Within this "cost-conscious mental health environment, a need has developed to more efficiently and adequately provide clinical assessments of psychiatric patients so that predictions of both outcomes and utilization of interventions are possible" (Lyons, Colletta, Devens, & Finkel, 1995a, p. 406). Third, consumers of services (i.e. patients as well as organizations that control health services for their subscribers, such as

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[1] In particular outcome evaluations designed to assess program impacts (as opposed to a specific treatment modality). This type of evaluation addresses questions about program effectiveness and usually involves measurement of outcomes at discrete points in time (e.g. at admission, discharge and follow-up) (Posovac & Carey, 1996).

[2] The interested reader is referred to Appendix A for an overview of the political and economic forces behind a prospective funding system.

Health Maintenance Organizations in the US) have become increasingly active in defining acceptable quality of care. Finally, health care organizations themselves have a vested interest in improving the quality of care, controlling the cost of care, and preventing litigation (Fauman, 1989).

More locally, recent provincial initiatives suggest that acute in-patient psychiatry programs, in particular, have a vested interest in evaluating the efficacy of their endeavours. In Ontario, the Mental Health Reform has called for a shift of resources from the in-patient sector of the health care system to the community sector - from 80% in-patient services and 20% community services to 40% in-patient services and 60% community services. The Reform has also requested a reduction in the bed ratio to 30 psychiatric beds per 100,000 population (the ratio in the Ottawa-Carleton area is currently 38.1 per 100,000 people) and has . committed to move 978 institutionalized people of all ages into the communities by the year 2000. Consistent with this, Bill 26 (the Savings and Restructuring Act) created the Health Services Restructuring Commission whose mandate was to determine and issue specific directions to area hospitals. During the course of this evaluation, the Commission passed its judgement which included the closure of Brockville Psychiatric Hospital, an intermediate stay/rehabilitation mental health care centre. An anticipated consequence of these fiscal cut backs and hospital closures will be increased competition for acute care in-patient treatment. As greater numbers of prospective patients vie for fewer beds, measures to accommodate increased competition will continue in the form of more stringent selection criteria and reduced length-of-stays. Greater emphasis on community based care and briefer admissions are also expected to place additional demands on caregivers who must assume greater responsibility for their psychiatrically impaired relatives, many of whom may be discharged with disruptive symptoms that did not get resolved during hospitalization.

Finally, social forces suggest that evaluations of geropsychiatry in-patient programs are particularly timely. This statement is based on the fact that Canada is experiencing an elderly boom. Nationally, it has been projected that by 2036, approximately one-quarter of the population will be over the age of 65 years (Statistics Canada, 1991). Locally, census data taken from 1995 revealed that 80,515 people (10.7% of the population) in Ottawa-Carleton were over the age of 65. As is indicated in Table 1, this is a 30% increase over the number of elderly living in the region in 1987. It is projected that the 1995 figures will increase by another 23% in 2003, and another 32% between 2003 and 2010. Among the elderly, the largest growing group is people over the age of 85, which is estimated to increase by 132.8% by the year 2010.

As a result of this elderly boom, health problems of the elderly have assumed a new importance. Recent reports suggest that seniors experience more health problems, in general, than those between 50 and 64 years of age (Synergistics Consulting, 1996) and that seniors are hospitalized more often than middle-aged adults for most kinds of illnesses (Statistics Canada, no date on document). In terms of dollars spent on health care, estimates suggest that between 20 to 50%

Table 1

Ottawa-Carleton Demographic Projections for the Elderly

AGE GROUP	1987	1995	Increase over 1987	2003	Increase over 1995	2010	Increase over 1995
65-74	38329	47120	0.229	52591	0.116	68255	0.448
75-84	17771	25971	0461	34917	0.344	39120	0.506
85 and over	5744	7424	0.292	11626	0.566	17280	1.328
Total over 65	61844	80515	0.302	99134	0.231	124655	0.548

Note. Reproduced from Ottawa-Carleton Regional District Health Council Working Papers "Mental Health Needs of the Elderly: A Plan for General and Specialized Mental Health Services in Ottawa-Carleton" (1995) and "Mental Health Care of the Elderly in Ottawa-Carleton to the Year 2000" (1988).

of the Canadian health expenditures are consumed on behalf of seniors (National Advisory Council on Aging, 1994).

The health problems experienced by seniors are not restricted to physical difficulties. Locally, the most current data suggest 51.6% of all mental health bed days are occupied by seniors (Ministry of Health, 1994). The prevalence estimates for mental disorders in the elderly are presented in Table 2. These estimates indicate that 25% of elderly individuals will, at some point, require some form of mental health care (Health & Welfare Canada, 1991). This means that the number of elderly individuals who will require mental health services will, in conjunction with the elderly boom, increase from an estimated 20,129 in 1995 to 31,164 in 2010 (Health & Welfare Canada, 1991). Current prevalence rates, however, may underestimate the numbers of persons with dementia who will require specialized

Table 2

Ottawa-Carleton Prevalence Estimates of Mental Disorders in the Elderly

Mental Disorder	Prevalence estimates	1987	1995	2003*	2010*	Reference
Overall	25%	15 461	20 129	24 783	31 164	Health & Welfare Canada (1991)
Affective Disorders	6-11%	3 711- 6 803	4 831- 8 857	5 948- 10 904	7 480- 13 713	Ottawa-Carleton Regional District Health Council, (1994)
Dementia	8%	4 948	6 441	7 931	9 972	Canadian Study of Health and Aging Working Group (1994)
Schizophrenia	0.855%	529	688	848	1 066	Ottawa-Carleton Regional District Health Council, (1994)
Obsessive Compulsive	1.9-3%	1 175- 1 855	1 530- 2 415	1 884- 2 974	2 368- 3 740	Ottawa-Carleton Regional District Health Council, (1994)

Note. Reproduced from Ottawa-Carleton Regional District Health Council Working Paper "Mental Health Needs of the Elderly:
A Plan for General and Specialized Mental Health Services in Ottawa-Carleton" (1995) and "Mental Health Care of the Elderly in Ottawa-Carleton to the Year 2000" (1988).
*2003 and 2010 prevalence figures were computed by Ottawa-Carleton Regional District Health Council, 1995, and derived based on Ottawa-Carleton elderly resident population projections from Table 1.

care. Specifically, current estimates indicate that only 8% of the elderly population presents with a dementia. However, since the probability of having a dementia increases with age (Jeans, Helmes, Merskey, Robertson, & Rand, 1987), and given that it is expected that the elderly population will not only grow, but will grow disproportionally older, the number of elderly persons who present with a dementia is likely to exceed the current estimated 8% of the elderly population (Canadian Study of Health and Aging Working Group, 1994).

In order to accommodate these growing needs, it has been estimated that the number of designated geropsychiatry beds in the region will need to be increased from the current 36 (26 geropsychiatric beds at the Royal Ottawa

Hospital and 10 beds reserved in the general psychiatry ward of the Ottawa General Hospital) to 70 by the year 2000 (Ottawa-Carleton Regional District Health Council, 1988). Political and economic restraints, as detailed above, suggest that this need will not be met.

Summary, Purpose and Organization of Report

Pressures for accountability have identified a need to efficiently and adequately provide clinical assessments of psychiatric interventions so that treatment impacts may be determined and to develop predictive models of both utilization and outcomes of interventions. These needs are particularly timely for acute care geropsychiatry in-patient programs. On the one hand, these programs are serving a growing demographic group that is expected to present with greater needs, especially in the area of dementias. On the other hand, they are operating under the direction of the Mental Health Reform, which has called for a shift of mental health resources from the in-patient sector to the community sector. As a result, it is anticipated that geropsychiatry in-patient units will be forced to treat a select group that is more impaired with fewer resources and briefer admissions. Moreover, with briefer admissions, families are expected to assume a greater role in providing care for their impaired elderly relatives. To these ends, evaluations are needed to address three key issues.

First, it is important to identify the epidemiology of current geropsychiatric in-patients. Identifying patient characteristics and subsequent demands on geropsychiatric units are important because a treatment program can only provide quality care to the extent that it understands the characteristics and needs of its clientele (Adams & Cohen, 1995). Moreover, this information is needed to qualify or facilitate the interpretation of outcome data (Adams & Cohen, 1995). To this end, comparing characteristics of current patients to patients treated in the past may serve to validate whether, in fact, geropsychiatry units are treating patients who are more impaired with briefer admissions. Related, knowledge on how the growing demented population differs from non-demented patients may serve to project the demands to which geropsychiatric in-patient units will need to respond and to better estimate the burdens under which they will increasingly be expected to operate.

Second, given the possibility of a growing discrepancy between population demands and available resources, evaluations are needed to document treatment impacts. To this end, and given anticipated differences in characteristics of demented and non-demented patients, it is important to identify whether the growing population of demented patients improve in similar ways with hospitalization as their non-demented counterparts. Further, the discrepancy between resources and a growing demographic need suggests that studies should endeavor to identify variables that predict treatment response in order to assist clinicians and administrators in prospectively identifying patients for whom hospitalization is most beneficial. Finally, a prospective funding system will require predictive models of resource allocation suggesting a need to identify variables that predict resource use.

Third, given shorter admissions and the anticipation of increased caregiver responsibilities, evaluations are needed to assess the impacts of treatment for caregivers. Consideration of caregivers of geropsychiatric in-patients is particularly timely given the growth of the elderly population, many of whom may continue to display aberrant behaviors following discharge, behaviors that their caregivers will be expected to manage. To this end, particular emphasis should be placed on identifying how geropsychiatric in-patient treatment impacts on the stresses associated with being a caregiver and on identifying how best to reduce caregiver burden.

The following is an evaluation of the Royal Ottawa Hospital (ROH) Geriatric Psychiatry In-Patient Unit. This unit was selected for evaluation because, as with other geropsychiatric in-patient programs in Ontario, it has experienced significant changes in service delivery as a result of fiscal cut-backs in recent years despite the fact that it is serving a growing population who is purported to be more impaired. For example, although the Unit expanded from 12 beds to 24 in 1987 to the current 26 in 1997, additional strategies, such as reducing the length of admissions[3], have been required to meet increasing population demands. Indeed, increasing the number of beds and reducing length-of-stays have enabled the Unit to treat greater numbers of patients by almost 300%, from 55 in 1987 to 212 in 1997. Despite servicing more clients, the Geriatric Psychiatry In-Patient staff:patient ratio has dropped in the past decade from 7-8:24 to 7:26 on weekdays

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[3] Mean length-of-stay was 63.5 ± 30.58 days in 1987, compared to 44.18 ± 34.37 in 1997, $t(259) = 3.79$, $p < .001$.

(4:24 to 4:26 on weekend days) and 4-5:24 to 4:26 on evenings. Night shifts are still covered by 2 people. However, while two nurses covered nights in 1987, one nurse and one registered practical nurse cover nights in 1997. In total, the full-time equivalent hours has dropped from 19 in 1987 to the current 17.1 in 1997. Thus, as a result of social, political, and economic forces, the ROH Geriatric Psychiatry In-Patient Unit is treating a growing population with shorter admissions and fewer resources. Given that the forces under which the ROH Geriatric In-Patient Unit operate are analogous to pressures being imposed on other geropsychiatric in-patient units, as detailed above, and insofar as patients and activities of the Unit are are comparable to those of other similar units, results of this evaluation may be generalized to other geropsychiatric in-patient units.

This evaluation will begin with a general description of geropsychiatry in-patient programs and a more specific overview of the ROH Geriatric Psychiatry In-Patient Unit. These descriptions will serve to provide the context in which the evaluation was undertaken. Understanding the context in which the evaluation was done is important because results of evaluations are most meaningful when the program is appropriately understood and articulated (Adams & Cohen, 1995). Further, documenting parallels between geropsychiatric in-patient units as described in the literature and the ROH Geriatric Psychiatry In-Patient served to identify the extent to which the findings from this evaluation could generalize to other geropsychiatry in-patient units. Following these descriptive accounts three separate chapters, organized according to the three key evaluation issues that were presented above, will review the literature relevant to each. These reviews functioned to refine the specific questions to be addressed in the evaluation and to identify gaps in the literature to which the evaluation served to respond. A summary of the specific questions and hypotheses is followed by a description of the methodologies that were used to address each of the three primary issues. Evaluation findings are then presented according to the primary issues that were explored. In the final chapter, the overall conclusions to be drawn from the integrated analyses are presented and are assimilated with findings from studies which preceded this evaluation.

Chapter 2. REVIEW OF GEROPSYCHIATRY IN-PATIENT PROGRAMS

General overview

In Canada, geriatric psychiatric in-patient programs "are listed as essential resources for patient care" (Health & Welfare Canada, 1988; Royal College of Physicians of London, 1989, as cited in Rivard & Potoczny, 1996, p. 973). Like other geriatric psychiatry programs, these acute care in-patient programs grew out of the recognition that elderly people with psychiatric illnesses have unique needs (e.g. conjoint medical and psychiatric illnesses) which may require specialized structures, staffing, and programming , separate from their younger counterparts (Sadavoy, Lazarus, Jarvik, & Grossberg, 1996).

As discussed by Rivard & Potoczny (1996), and based on Health and Welfare Canada (1988) recommendations, in general hospitals, geriatric in-patient units may operate as "part of the general psychiatric unit, with specific staff and programming for the elderly population, or (they may operate as) separate, usually small, units (of the hospital)" (p. 977). They may alternatively operate jointly with geriatric medicine units (Rivard & Potoczny, 1996). Finally, geriatric in-patient units may be established in psychiatric hospitals (Rivard & Potoczny, 1996), which are usually referred to in the literature as geropsychiatric wards or units (Zubenko et al., 1997).

While convenience is most likely to dictate the actual location of the unit, several structural elements, designed to address the special needs of the elderly, are common to geropsychiatric in-patient (Rivard & Potoczny, 1996). For example, Rivard and Potoczny (1996) suggest that because wandering and agitation are common in geriatric psychiatry patients, the units are usually locked to accommodate wandering behaviour, provide adequate exercise, and to provide a safe environment for patients who are acutely suicidal or psychotic. In addition, Rivard & Potoczny (1996) recommend that because many patients are visually and/or hearing impaired, "good lighting,... large print material, and easy-to read signs (are typical)....(while) sound-amplifying electronic systems (are often used to) facilitate individual and group therapy (session)" (p. 977). Finally, nonskid flooring, wide corridors with handrails and uncluttered rooms provide for easier mobility for patients who are at risk for falls and to facilitate walker and wheelchair access (Rivard & Potoczny, 1996). Thus, although the placement of geropsychiatric in-patient units may vary, these units share certain physical features all of which are designed to meet the specific needs of the elderly.

This chapter will provide a general overview of geropsychiatric in-patient programs. Identifying the general dimensions of these programs, including admission criteria, staffing, goals and services offered will serve to provide the basic framework upon which the ROH Geriatric Psychiatry In-Patient Unit may be compared. To the extent that admission criteria, goals, and services of the ROH Geriatric Psychiatry In-Patient Unit, discussed in the next chapter, parallel those of other geropsychiatric in-patient units, evaluation findings based on the ROH Unit may be generalizable to other similar units.

Criteria for admission

According to a report by the Ottawa-Carleton Regional District Health Council (1988), geriatric psychiatry in-patient units are needed for the assessment of elderly patients who present with atypical and comorbid psychiatric disorders (e.g. coexisting depression and dementia, alcohol abuse and depression) and treatment of severely ill individuals who cannot safely be treated while living at home (e.g. suicidal patients, severely agitated or aggressive patients). Specific indications for geriatric acute care in-patient treatment, as identified by Whanger (1989) and summarized by Rivard and Potoczny (1996) are presented in Table 3. As can be seen therein, elderly (aged 65 and over) psychiatric patients are admitted to in-patient status when they pose a threat to themselves or to others, when intensive evaluation or treatment is required, and/or when caregivers are no longer able to provide the necessary care. In addition to these general indicators, lacking access to personal or community supportive services, having combined mental and physical disabilities, living alone, and having no children have all been identified as predisposing and/or precipitating admission to these units (Grauer & Birnbom, 1975; Palmore, 1976).

Guidelines for services

Health and Welfare Canada (1988) has published components of comprehensive services for elderly mentally ill persons, including types of services and principles of good psychogeriatric care. These guidelines, which have been reviewed by Rivard & Potoczny (1996), "emphasize the need to consider acute

Table 3

Indications for Geriatric Acute Care In-Patient Treatment

Imminent danger to self or others	**Intensive evaluation or treatment is required**	**Failure of the caregiver system**
Suicidal or potentially harmful behaviours	Difficult diagnostic issues requiring close observation	Principle caregiver dies, leaves, or needs temporary relief
Homicidal, violent, or aggressive behaviours	Psychiatric illness complicated by drug or alcohol addiction	Depletion of care resources without alternatives
Threatening behaviours while acutely psychotic	Acute psychosis with unpredictable behaviour	Lack of community resources or respite care beds
Fire hazard	Need for intravenous or frequent intramuscular injections	
Inability to attend to basic or essential care needs	Need for electroconvulsive therapy	
Dangerous wandering behaviour	Multiple medical problems or drug sensitivities requiring close monitoring	
	Good prognosis but intensive treatment required	

Note. Reproduced from Rivard & Potoczny, 1996

in-patient treatment... as part of a continuum of care that should be available to elderly patients with psychiatric problems" (p. 974). These principles are:

- multidisciplinary staffing;
- pre-admission screening;
- maintaining the patient in the community;
- beginning discharge planning at admission;
- collaboration with community agencies.

Multidisciplinary staffing. "Multidisciplinary staff are required to address concurrently the physical, psychological, and social problems that can contribute to the psychiatric illnesses seen in old age" (Rivard & Potoczny, 1996, p. 974). According to Rivard & Potoczny (1996), the need for multidisciplinary treatment is based on studies that have reported that many geropsychiatric in-patients present with combined psychiatric and medical illnesses (Conwell, Nelson, Kim, & Mazune, 1989; Harrison, Kernutt, & Piperoglou, 1988; Zubenko et al., 1997). Moreover, "most elderly patients have acquired multiple age-related and disease-related deficits" (Rivard & Potoczny, 1996, p. 974), many of which may precipitate the psychiatric decomposition (Weingarten, Rosoff, Eisen, & Grob, 1982) and need to be addressed in treatment.

Pre-admission screening. Pre-admission screening "helps to establish proper prioritization (of patients for admission), prevent unnecessary or inappropriate admissions, and prepare realistic plans for discharge" (Rivard & Potoczny, 1996, p. 974). Rivard and Potoczny (1996) report that pre-admission screening may be "most informative if done at the patient's residence to give a better idea of the physical and social assets or liabilities of the individual and to see how the person relates to his or her family and caregivers in the natural setting" (p. 975).

Maintaining the patient in the community. Encouraging continued involvement with the patients' family is important because involving the family has been associated with shorter hospitalizations (Meier, Besir, & Sylph, 1992; Skeet, 1983). Keeping admissions as brief as feasible is important because shorter length-of-stays have been associated with more successful reintegrations into the community (Pitt, 1982; Skeet, 1983). According to Rivard & Potoczny (1996), maintaining the patient in his/her community involves providing relatives and friends with information about the (patient's) psychiatric problems and (encouraging them) to participate, as appropriate, in the in-patient care (p. 995).

Beginning discharge planning at admission. As discussed by Rivard & Potoczny (1996), discharge planning is designed to maximize the potential of returning the patient to his or her pre-admission residence. This, they report, will be facilitated by knowing and "understanding... the patient's living situation prior to admission, maintaining the patient's community resources (e.g. living accommodations, support of family and friends), and dealing with potential obstacles to returning or staying at home" (p. 976).

Collaborating with community agencies. Collaborating with community agencies is important because physicians are more likely to discharge sooner if supports are expected from community agencies (Rivard & Potoczny, 1996). Liaising with agencies such as Home Care and long-term care facilities are examples of community collaborations.

Outcome goals of geriatric psychiatry in-patient units

The specific treatment goals and outcome expectations of in-patient treatment will vary both with the type of institution or facility and with the particular patient. According to Whanger (1989),"...the basic goals of the psychiatric hospital are to provide the most effective treatment available for the patients' disorders and to rehabilitate them to their best potential" (p. 624). To this end, the World Health Organization (1991) has recommended that mental health programs, including geriatric psychiatry programs, strive to improve, at the very least, not only clinical pathology (i.e. symptom reduction) but also functional status and quality of life. In addition, as a result of a resurged interest in the basic subject of quality in health care, as exemplified by movements such as total quality management (TQM) and continuous quality improvement (CQI) (Zastowny, Stratmann, Adams, & Fox, 1995), satisfaction with care has been listed as an important objective of health care services (Donabedian, 1980), including mental health care services (Zastowny & Lehman, 1988). Finally, in response to a recent shift in mental health paradigms (Bernheim, 1990), the importance of considering the impact(s) of psychiatric in-patient treatment on caregiver burden has gained prominence (Liptzin, Grob, & Eisen, 1989).

Functional status. Functional status includes "everyday behaviours that occur in a person's home or community" (Silver & Herrman, 1996, p. 230) including psychosocial functioning (e.g. communication skills, social support, family and marital functioning, and use of leisure time), occupational functioning (e.g. degree of participation in the work force), and level of self-care/ independence in activities of daily living (e.g. ability to practice good hygiene) (Rubenstein, Calkins, & Decker, 1989). Since most people retire at the age of 65, improved occupational functioning is not typically an issue for geropsychiatry in-patient units. In contrast, activities of daily living and psychosocial functioning are important considerations in the treatment of geropsychiatric patients.

Consideration of activities of daily living are important because declines in ability to care for self have been found to be significantly associated with death or nursing home placement (Palmer, 1995). Similarly, low levels of social contact and involvement have been associated prospectively with higher mortality from all causes (Berkman & Syme, 1979; Blazer, 1982; C.I. Cohen, Terisi, & Holmes, 1987; Hanson, Isacsson, & Janzon, 1989; Hirdes & Forbes, 1992; House, Robbins, & Metzner, 1982; Kaplan, Salonen, & Cohen, 1988) and with ischemic heart disease (Berkman & Syme, 1979; Kaplan et al., 1988), myocardial infarction (Ruberman, Weinblatt, & Goldberg, 1984), cancer (Berkman & Syme, 1979), and depression (Harlow, Goldberg, & Comstock, 1991a, 1991b). Moreover, patients who are cognitively impaired and medically frail are particularly likely to be functionally disabled by their psychiatric illnesses (Silver & Herrman, 1996).

Quality of life. Although many definitions have been attempted, both theoretical and empirical, and no consensus has been reached as to a workable definition, agreement does exist regarding the importance of the quality of life concept. Most also agree that the concept "quality of life" includes both objective and subjective components (e.g. Baker, Godfrey, & Intagliata, 1992; Bigelow, McFarland, & Olson, 1991). The objective or functional component can include aspects of social functioning such as independent living and employment (Rapp, Gowdy, Sullivan, & Wintersteen, 1988). The subjective component is frequently been "conceptualized as the objective and subjective effects of providing ongoing assistance to an ill relative" (p. 80). To this end, objective burden has been defined as the verifiable and observable effects of caregiving (Platt, 1985), including, for example, financial strain or household disruptions (Reinhard, 1994). Subjective burden has been defined as the emotional consequences of caregiving (Thompson & Doll, 1982), and includes such reactions as shame, guilt, and worry (Reinhard, 1994).

Addressing the burden associated with caring for a mentally ill relative is important because high levels of burden in caregivers of a mentally ill relative have been associated with physical, financial, and emotional strain, including psychiatric symptomatology in the caregiver (D. Cohen & Eisdorfer, 1988; Schultz, Tompkins & Rau, 1988). Consideration of burden in caregivers of geropsychiatric patients is particularly important because the problems associated with caring for an elderly relative have been reported to be greater than those associated with caring for a younger relative (Grad & Sainsbury, 1963). However, the consequences of caregiver strain may also impact on the health care system. For example, caregiver breakdown may result in re-hospitalization or institutionalization of the care recipient (i.e. the patient) (Longino & Mittelmark, 1996; Stephens, Kinney, & Ogrocki, 1991).

Services offered by geriatric psychiatry in-patient units

Consistent with multidimensional treatment goals, geropsychiatric in-patient programs typically operate according to a multifaceted, biopsychosocial approach

(Whanger, 1989). These have been reviewed, briefly, by Rivard & Potoczny (1996). According to Rivard & Potoczny (1996), geropsychiatric in-patient treatment usually begins with a multidimensional assessment. The treating physician usually begins with "an assessment of the medical and psychiatric problems of the patient, taking a careful history and performing appropriate medical and laboratory investigations. Nurses, occupational therapists, and physiotherapists usually focus on functional assessments (to identify)...problem areas....Social workers provide details on the patient's familial and social resources, identifying problem areas that will have to be addressed...during hospitalization. (Finally, psychometrists and/or) psychologists help document the cognitive abilities and deficits of the patient" (Rivard & Potoczny, 1996, p. 981).

Once assessment is complete and problems and diagnosis(es) have been identified, individualized, multidisciplinary treatment plans and goals are set in conjunction, whenever possible, with the patient and caregivers (Rivard & Potoczny, 1996). These goals are determined by "the patient's psychiatric and medical illnesses... and best previous level of functioning"[4] (Rivard & Potoczny, 1996, p. 981). The formulation of the treatment plan typically takes place either "formally, by inviting the patient and caregivers to participate in multidisciplinary patient conferences, or informally, by discussing the treatment plan with patients and family

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[4] Determination of previous level of functioning is based on patient and family interviews and information available through clinical records and/or other documentation (e.g. correspondence with facilities or family physicians).

(Rivard & Potoczny, 1996, p. 982). Consistent with the multidimensional approach used in these units, the treatment plan may consist of a variety of treatment modalities, as individual needs dictate.

Biological therapies. Upwards of 99% of geropsychiatric in-patients are treated with some form of biological therapy, such as psychotropic medications (e.g. antidepressants, anxiolytics and neuroleptics) or electroconvulsive therapy (Zubenko et al., 1997). According to Young & Meyers (1996), "pharmacological treatments (and electroconvulsive therapy) have a role in acute symptom reduction, reversal of episodes of illness, and prevention of relapse and recurrence" (p. 757). Pharmacological treatments may also be used to address concurrent medical problems (Whanger, 1989) which may complicate the clinical picture of the elderly psychiatric in-patient by contributing directly to functional disability (Parmelee, Thuras, Katz, & Lawton, 1995), or by interacting with psychiatric problems to impact on functioning and general well-being (Zubenko et al., 1997). As reviewed by Zubenko et al. (1997), this relationship may be direct, as indicated by studies that have concluded that medical problems contribute directly to the occurrence of a depression (Schulberg, McClelland, & Burns, 1987; Winokur, Black, & Nasrallah, 1988), or more indirect, as when poor health limits the choice of treatment modalities and opportunities (Katz, 1993). Alternately, and based on findings of Murphy and Brown (1980), Zubenko et al. (1997) suggest that insofar as medical illnesses are perceived as stressful life events, they may "precipitate the exacerbation of a recurrent affective disorder" (p. 724). For these reasons, biological treatments are essential to address not only the underlying psychiatric disorder but also any concurrent medical problems.

Behaviour therapies and psychotherapy. According to Whanger (1989), behaviour therapies and psychotherapies have several core principles that bind them together. The main concern is problematic cognition and/or behaviour and the premise is that these cognitions and/or behaviours are learned responses. These are maintained like other cognitive and/or behavioural patterns, and more adaptive patterns of cognition and/or behaviour can be learned to supplement them (MacDonald & Kerr, 1982). Among the various therapy techniques that have been used to modify behaviour with the elderly are attitude therapy (Folsom, 1966), habit retraining (e.g. Milne, 1976), biofeedback (e.g. Whitehead, Burio, & Engel, 1985), and insight oriented therapy (Kovacs, 1977). According to Rivard & Potoczny (1996), "although these techniques have been studied mostly in long-term care or outpatient settings, they may be applied to a limited extent to in-patient, acute care populations" (p. 983). For example, these authors reported that relaxation training and desensitization may be effective for anxiety related disorders, while habit retraining may be required for incontinence. Similarly, as discussed by Rivard & Potoczny (1996), cognitive psychotherapy has been found to be effective in treating depressed nonpsychotic elderly out-patients (Steuer, 1982), while insight-oriented therapy is likely only appropriate at or near discharge for many of these acute patients (Rogoff, 1986).

Group therapies. As reviewed by Leszcz (1996), group therapy approaches with elderly psychiatric patients have multiple purposes. Included among these are the reduction of symptoms and feelings of isolation, and the promotion of interpersonal engagement, coping and interpersonal skills (Leszcz, 1996). These goals may be accomplished within the context of a broad range of approaches. What links all effective group approaches is the creation of a context for interpersonal engagement between and among a number of patients and a therapist that operates according to certain structures and group norms and aims to achieve a degree of group cohesiveness, reflected in feelings of mutual interest, attachment, and task effectiveness. Included in Leszcz's (1996) review of the types of group therapies that have been used with geriatric patients are verbal-centred groups for the cognitively intact (e.g. cognitive therapy groups, psycho education groups, reminiscence groups), verbal-centred groups for the cognitively impaired (e.g. reality orientation groups), and creativity- and activity-centred groups (e.g. nutrition groups, art groups).

Rehabilitation and maintenance therapies. Rehabilitative therapies are designed to restore the patient to physical, mental, and social functioning commensurate with their abilities or disabilities (Rudd & Margolin, 1968). Maintenance therapies, in contrast, involve therapeutic measures that will retard deterioration in patients who are ill by either slowing or arresting disease related processes (Rudd & Margolin, 1968). According to Whanger (1989), rehabilitation and maintenance therapies include physical therapies, occupational therapies, and recreation therapies. Physiotherapies, including exercise programs, are designed to address medical and physical disabilities and to educate patients on the appropriate use of physical aids (Rivard & Potoczny, 1996). Occupational therapies are designed to increase self-confidence and self-esteem and to maintain or restore specific skills (Rivard & Potoczny, 1996). These goals are accomplished through constructive activities, such as arts or baking, suitable to the individual's interests and capacities (Wolf, 1970). Finally, recreational therapies "provide an opportunity to assess the patients strengths, weaknesses, and customary modes of adapting" (Rivard & Potoczny, 1996, p. 984). Moreover, recreational activities should help to stimulate, revive, or maintain various creative and expressive functions (Whanger, 1989). Examples of recreation activities that are common to geriatric in-patient programs, as reviewed by Rivard & Potoczny (1996) include community outings, music groups, card games, and parties that "stimulate socialization and provide pleasure and satisfaction" (p. 985).

Family interventions. Finally, treatments aimed at the patients' social support are typical components of the geropsychiatric in-patient program (Whanger, 1989). According to Rivard & Potoczny (1996), family therapies are often employed and involve "negotiate(ing) appropriate goals for family intervention...(assisting the family in) accepting the reality of the illness and understanding the current episode...and managing or minimizing future (caregiver) stresses " (p. 983). Structured caregiver support groups are also routinely available to families and friends of geropsychiatric in-patients who wish to attend (Leszcz, 1996). Caregiver groups are designed to provide social support, education, and an environment where caregivers may safely work through their emotions surrounding loss, grief, and/or anger (Leszcz, 1996). Finally, commensurate with the recent shift in the mental health paradigm, which highlights the need for professional and family collaboration and stresses open communication, shared decision-making, and ongoing support, increased emphasis is being placed on the need for professionals to provide ongoing informal support to caregivers in an effort to reduce family members' sense of burden and feelings of helplessness (Bernheim, 1990).

Summary

To sum, geriatric psychiatry in-patient programs are designed to provide individualized and multidimensional care to elderly persons with severe mental illness who pose a threat to themselves and/or other persons, require intensive evaluation or treatment which cannot be safely provided in less resource-intensive environments, and/or who can no longer be cared for by their primary caregivers. A biopsychosocial approach to treatment is designed to take into account a patient's physical, psychiatric, and social problems and makes optimal use of his/her abilities. Although none of the treatment techniques reviewed herein are limited to in-patient settings, they are all potentially important in caring for the more impaired individuals who are likely to require geropsychiatric in-patient care.

Chapter 3. DESCRIPTION of the ROYAL OTTAWA HOSPITAL GERIATRIC PSYCHIATRY IN-PATIENT UNIT[5]

General overview

Initiated in 1972, the ROH Geriatric In-Patient Unit was developed in response to influences similar to those which inspired the field of Geriatric Psychiatry, namely the dramatic growth in the number of elderly people with severe mental illness who presented to general psychiatry programs. The acknowledgement that these elderly patients required specialized treatment was reinforced with the recognition that they often presented with a combination of complex psychiatric and medical problems, that their physical care needs were greater than those of the younger psychiatric patient population, and that they responded to medications differently than did younger populations.

The Geriatric In-Patient Unit operates under the umbrella of the Geriatric Psychiatry Program of the Royal Ottawa Hospital (ROH), which is part of the Royal Ottawa Health Care Group.

Royal Ottawa Health Care Group. The Royal Ottawa Health Care Group is "an integrated delivery system incorporating service (primary, secondary and tertiary levels of care), research and education through the Royal Ottawa Hospital,

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[5] Information presented herein were obtained through staff consultations and reviews of program documents.

the Rehabilitation Centre[6], their affiliated satellite operations and networks" (The Corporate Plan, 1996, p. 3-3). According to the most recent ROH Corporate Plan (1996), the Royal Ottawa Health Care Group, "in partnership with our clientele and their communities, provide quality care in the areas of specialized physical rehabilitation and mental health services. (The Royal Ottawa Health Care Group) will strive to assist clients to identify and meet their needs through excellence and leadership in care, education, research and advocacy" (p. 2-1).

Royal Ottawa Hospital. The ROH in which the Geriatric Psychiatry program operates, is "an integrated mental health delivery system for service, education and research in the Ottawa-Carleton region[7]" (The ROH Corporate Plan, 1996, p.3-1). In operation since 1910, the ROH is the only acute-care psychiatric hospital in the region. The ROH employs 545 people. Its 207 active beds are typically used close to capacity (94.4% occupancy rate). The hospital accommodated 2,893 in-patient admissions during the 1996-1997 fiscal year, 433 admissions to day hospitals, and in excess of 200,000 outpatients.

The Hospital's mandate is to offer client-oriented, interdisciplinary clinical services focused on prevention, assessment, treatment and rehabilitation of

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[6] Although a recent recommendation by the local Hospital Restructuring Committee transferred the governance of the Rehabilitation Centre from the Royal Ottawa Health Care Group to the amalgamated Hospital, at the time that this was written, it was still part of the Royal Ottawa Health Care Group corporation.

[7] Following the local Hospital Restructuring Committee's decision, the ROH's catchment area is being expanded to include all of Eastern Ontario and Western Quebec.

persons with serious mental illness in a safe, respectful, and cost-effective environment. The clinical mandate is complemented by, and integrated with, the promotion of mental health and the hospital's involvement in research and education. In addition, the Royal Ottawa Hospital strives to be responsive and supportive to individuals and agencies in optimizing effective continuum of care for persons with mental illness at the primary, secondary and tertiary levels of treatment. Finally, as a referral centre, the Royal Ottawa Hospital's primary catchment area for planning purposes is Eastern Ontario and Western Quebec (The ROH Corporate Plan, 1996, p. 3-1).

Geriatric Psychiatry Program. The Geriatric Psychiatry Program is part of a continuum of care available in Ottawa-Carleton for the elderly. It works cooperatively with the geriatric medical and psychiatric programs of the University of Ottawa, community agencies, and families with the aim of using "...specialized services to meet the needs of persons 65 years of age and over...(to assist) individuals to improve their quality of life and achieve optimum level of functioning" (Annual Report of the Geriatric Psychiatry Program, 1996, p. 1).

The Geriatric Psychiatry Program consists of an Out-Patient Service, an Outreach Service, a Day Hospital, and finally the In-Patient Unit. The Out-Patient Service provides the initial assessment for all patients referred to the Geriatric Psychiatry Program and follow-up treatment for discharged patients. It also is a consultation service offering advice and psychiatric expertise to primary care physicians.

The Outreach Service was developed to assist administrators, physicians, and direct-care staff of long-term care facilities to meet the mental health needs of their residents. Geriatric outreach psychiatrists and clinical nurse specialists provide on-site assessments, recommendations, and follow-up treatment. They also provide formal teaching programs tailored to meet the educational needs of the long-term care staff.

The Geriatric Day Hospital provides treatment and crisis intervention for persons who require urgent and intensive treatment but can safely live in the community. It provides assessments, as well as individual and group treatments.

Finally, the Geriatric In-Patient Unit[8] is a 26 bed, age segregated, locked unit that provides assessments and individualized treatment for seniors with acute psychiatric illnesses in need of specialized treatment who cannot safely live in the community. It is fully equipped with prosthetic aids, social recreational aids (e.g. music room, T.V. room), and has standard physical amenities (e.g. phones, books). As is typical of geropsychiatric in-patient units (reviewed in the previous section), the ROH Unit is also equipped to meet the special needs of the elderly, including the use of wide corridors, handrails, and large print materials.

Geriatric Psychiatry In-Patient Unit admission criteria

At the time of this evaluation, the Geriatric In-Patient Unit was designed to

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[8] As indicated in Chapter 1, the number of beds on the Unit has increased over the past 10 years, while staffing ratios have been reduced. However, admission criteria, treatment opportunities, policies and procedures have remained consistent over the past 10 years.

respond to the needs of elderly persons who had late onset psychiatric disorders and/or who had complex needs requiring specific geriatric psychiatry expertise. According to the Unit's admission criteria, persons whose needs were expected to be met by the service included:

- Elderly people who posed a threat to themselves or others by exhibiting:
    - suicidal and potentially harmful behaviours such as self neglect, refusing essential medical care or self-mutilating behaviour;
    - homicidal, violent/aggressive behaviour or the presence of serious threatening behaviour in the presence of acute psychosis or behaviour that is potentially harmful to others, such as fire setting;
    - imminent and serious physical impairment through lack of competence to care for self or meet basic activities of daily living because of severe agitation, psychomotor retardation or confusion and disorientation;
    - imminent danger associated with wandering behaviour; and
    - acute psychiatric reactions to medications, or impeding delirium tremens that do not require hospitalization on a medical service.
- Elderly people who required intensive evaluation and/or treatment

which could not be provided in outpatient settings, including:

- those with difficult diagnostic issues where close observation over a few days was required for proper diagnostic assessment, including organic brain syndromes when hospitalization was expected to lead to the identification and treatment of a reversible cause or amelioration of secondary psychiatric disturbances;
- those who were addicted to alcohol or drugs mixed with other psychiatric diagnoses where control/supervision was needed to ensure proper detoxification and the person was not a suitable candidate for the Addictions program;
- acutely psychotic elderly patients with unpredictable behaviour due to preoccupations with bizarre delusions or hallucinations;
- elderly patients who needed frequent intramuscular psychotropic medications, required close observation during ECT, or whose medical problems or drug sensitivities required close regulation of oral medications and close medical/nursing monitoring; and
- elderly patients with psychiatric problems which were likely to improve with active and intensive treatment such as could only be provided on an in-patient unit, including mood disorders; paranoid psychoses of late life; substance abuse; personality

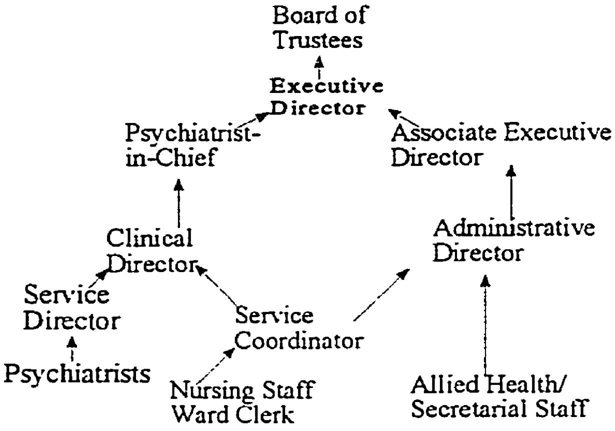
> disorders that complicated any of the above diagnoses; dementia when there were significant complications such as wandering, agitation, aggressive behaviour, paranoid behaviour and delusions, or depression; or other organic mental disorders such as severe organic mood disorders, delirium secondary to prescribed psychotropic medications, and organic delusional syndromes.

To the extent that the criteria for admission to the Unit was consistent with Whanger's (1989) criteria for geropsychiatric in-patient units, it is expected that, at the time of this evaluation, the ROH Geriatric Psychiatry In-Patient Unit catered to a patient population that was typical of other geropsychiatric in-patient units.

Staffing of the Geriatric Psychiatry In-Patient Unit

The organizational hierarchy of the Geriatric In-Patient Unit, at the time of this report, is represented in Figure 1. The arrows represent the direction of reporting. The nursing staff reported to the service coordinator, who reported to both the clinical and administrative directors. The allied health professionals (i.e. physiotherapist, recreational therapist, occupational therapist, psychometrist, social workers, and dietician), and secretarial staff reported to the Administrative Director, who reported to the Associate Executive Director. Although the psychiatrists were not "employed" by the ROH (they were paid by the Ontario Ministry of Health), they were accountable to the Service Director for the clinical care of the patients. The Service Director, in turn, reported to the Clinical Director, who reported to the

Figure 1. **Organizational hierarchy of the ROH Geriatric Psychiatry In-Patient Unit**



Psychiatrist-in-Chief. Both the Psychiatrist-in-Chief and the Associate Executive Director reported to the Executive Director, who in turn reported to the Board of Trustees.

Table 4 presents a breakdown of the Full Time Equivalent positions (FTE) of Geriatric In-Patient care staff by role. While simplistically presented, this breakdown is potentially more complex, as nursing staff were required to respond to the needs of outpatients who were previously assigned to them under the primary nursing care mode. Nursing staff also responded to emergency codes in other areas of the hospital. Similarly, psychiatrists worked in two of the four Geriatric Program services to ensure maximal integration of the services and continuity of care (their total FTE for the four services is 6.8). Finally, a pharmacist was available for consults on an as-need basis. Although organizational hierarchies are institution specific, the common element between staffing at the ROH Geriatric In-

Table 4.

Geriatric Psychiatry In-Patient Unit Direct Care Staff and Full Time Equivalent (FTE)

Staff Role	Number of Full- and Part- Time Staff	FTE
Nursing staff (registered nurses, registered practical nurses, orderlies)	26 (plus 5 casuals)	17
Psychometrist	2	1.2
Social workers	2	2
Occupational therapist	1	1
Recreation Therapist	1 (plus one student)	1
Clinical dietician	1	0.4
Physiotherapist	1	0.2
Psychiatrist	3	1.4

Patient Unit, as outlined in Table 4, and other geropsychiatric units is the use of multidisciplinary staff designed to cater to the multiple needs of its elderly patients.

Goals of the Geriatric Psychiatry In-Patient Unit

Consistent with other geropsychiatric in-patient programs (as reviewed earlier), in addition to the obvious goal of improving psychopathology, the Geriatric Psychiatry In-Patient Unit, at the time of this evaluation, endeavoured to assist patients to improve their quality of life and achieve their optimal level of functioning (Annual Report of the Geriatric Psychiatry Program, 1996, p. 1). In addition, insofar as the ROH had identified as a priority the provision of high quality care (The ROH Corporate Plan, 1996) and as exemplified by the fact that it had invested resources to measure patient satisfaction, satisfaction with treatment was deemed another goal of in-patient care. Finally, given that preventing relapses had been identified as a priority of the Unit (The ROH Corporate Plan, 1996) and consistent with the known relationship between caregiver burnout and re-hospitalization (Longino & Mittelmark, 1996; Stephen et al., 1991), the Unit endeavoured, through formal and informal family interventions, to minimize caregiver burden.

Overview of Unit direct care treatment services[9]

Referral strategies and pre-admission screening. Patients were typically referred to the Unit from community physicians, external agencies (e.g. nursing homes), Day Hospital physicians, Outreach physicians, Out-patient physicians, and Patient Emergency Service (PES) physicians. Admissions of clients to the In-Patient Unit were then determined, following the guidelines for geropsychiatric in-patient units (detailed in the previous chapter) during pre-admission screening meetings called Priority Meetings, in which Program psychiatrists, nurses, social workers, and support staff discussed the need for in-patient treatment for each person that was referred to the Unit. If someone was deemed in urgent need for in-patient treatment, decisions were made regarding which current in-patient was most appropriate for discharge to accommodate the new admission. In weighing the urgency of need for treatment, staff considered physical, psychological, and safety

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[9] In addition to direct care services, the staff also had indirect patient care responsibilities, such as charting, consults with other disciplines, and family meetings. Other mandates of the Geriatric Program (including the In-Patient Unit) included research, education, and advocacy.

risk factors of a given patient, as well as caregiver burnout. This process typically resulted in a wait list of, on average 4 people who waited between 4 days and 1 week for admission to the Unit.

Assessment. Upon admission, patients were assigned a primary nurse and a psychiatrist who conducted a thorough Nursing Assessment and Clinical Interview, respectively. These two procedures served to provide information on clinical and personal history, and to assess medical, mental, functional, and psychosocial status. When the need for additional assessments was identified by the nurse or psychiatrist, referrals were directed to different disciplines and/or agencies, as appropriate. For example, cognitive assessments were referred to the psychometrist, while specialized physical examinations, such as chest X-rays were referred to the Civic Hospital. The information gathered from these assessments were presented in interdisciplinary team meetings (called KARDEX meetings) at which point treatment goals and plans were developed and articulated.

Treatment. Treatment offered by the ROH Geriatric Psychiatry In-Patient Unit was consistent with literature guidelines (as detailed in the previous chapter). That is, once assessment was completed and problems and diagnosis(es) were identified, individualized, multidisciplinary treatment goals were set in conjunction, whenever possible, with the patient and caregivers. Goals were determined by the patient's psychiatric and medical illnesses and the patient's best previous level of functioning (based on information derived from patients, caregivers, and clinical documentation). The formulation of the treatment plan took place either formally, during KARDEX, or informally, by discussing the treatment plan with patients and families. During their stay all patients received standard direct care nursing interventions (e.g. provision of assistance with mobility, hygiene, eating, elimination, foot care, specimen collection, dressings), as well as individual counselling and behavioural therapy. Individual needs and plans dictated which of the following treatment modalities were additionally used: biological therapies (medication and/or ECT), group therapies, psycho education, social skills training, daily living skills training, mutual support groups, physiotherapy, occupational therapy, recreation therapy, and dietary interventions. A breakdown of the proportion of patients who required different interventions on the Unit in 1997, according to the primary service delivery discipline, are as follows:

- Biological therapies[10]:
    - electroconvulsive therapy: 22%;
    - any psychotropic medications: 100%;
        - antidepressants - 73%;
        - lithium - 32%;
        - benzodiazepine/anxiolytic medications - 78.5%;
        - neuroleptic/antipsychotic medications - 67%;
        - anticonvulsant medications - 22%;

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[10] Estimates of biological interventions (medications and ECT) provided to patients during their in-patient admission were tracked through clinical records and pharmacy records. Reviews of clinical charts identified whether patients were treated with ECT. Pharmacy records provided detailed information on the specific pharmacotherapies provided to patients during their admission. These records were based on physician orders and were processed on a daily basis.

    - other medications: 100%.
- Allied health interventions[11]:
    - Dietary: 68%.
    - Occupational therapy: 77%.
    - Physiotherapy: 83%.
    - Psychology: 26%.
    - Recreation therapy: 85%.
    - Social work - 85%.

When language of choice was an issue, that is In-Patient staff were unable to adequately provide treatment in French, Francophone patients (approximately 10% of the population) joined the Francophone activities and groups offered in the Day Hospital. In addition, some patients who, upon discharge, were to be referred to the Day Hospital were integrated into Day Hospital programs prior to discharge, to ensure ease of transition. In-Patient and Day Hospital teams followed an established plan to promote communication and clarify treatment plan issues.

Finally, family interventions were provided on the Unit and consisted of, as needed, couple or family therapy and quarterly Caregiver Support Groups. In addition, health teaching was offered to family caregivers and to staff of facilities to which patients were to be discharged. Finally, staff provided ongoing informal individual caregiver support and psycho education, as needed.

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[11] Estimates of allied health interventions were tracked through Workload Measurement data, reviewed in Chapter 8.

Discharge and follow-up care. Consistent with guidelines for services, as reviewed in the previous chapter, discharge planning typically began on admission. The post-discharge needs of all ROH Geriatric Psychiatry In-Patients were discussed within the context of KARDEX team meetings and documented on patient charts. Initial discussions for a given patient began during the first KARDEX meeting after admission. Meetings with patients and caregivers were also part of the discharge planning process and centred around identifying changes that needed to be made in the home environment to maximize optimal health. In addition, and as needed, staff liaised with community agencies, such as Home Care, to facilitate the discharge process and interacted with long-term care facilities and/or family physicians to keep them abreast of the patients' progress and the patients' impending post-discharge needs. Finally, as part of the discharge process, discharge summary forms were completed which documented discharge needs and ongoing individualized care planning.

Discharges themselves were typically expected within 50 days. If a patient was not released in this time frame, a review of the circumstances surrounding their extended length of stay was conducted when the case was discussed during KARDEX. Discharges were deemed appropriate when the patient's condition had improved enough to allow safe and efficient continuation of psychiatric treatment in a less resource-intensive setting; when it was clear that the patient's condition was chronic or unresponsive to treatment and a transfer to a long term care facility was necessary; when the patient's medical condition had worsened and the patient needed to be transferred to an acute medical facility; when the patient was no longer certifiable and wished to be discharged and/or; when the patient's condition would greatly benefit from the specialized expertise of another program and the patient accepted such a transfer offered by the given specialized program.

Follow-up care was routinely provided to all patients who resided in, or around, the Ottawa-Carleton catchment area. Follow-up care was provided through the Out-patient program, Outreach program, or Day Hospital.

Summary and representativeness of ROH Geriatric Psychiatry In-Patient Unit

To sum, the ROH Geriatric Psychiatry In-Patient Unit, as other geropsychiatric in-patient units, provided multidisciplinary care to elderly persons who posed a risk to themselves or others, who could not safely be treated in less resource intensive settings, or who could no longer be properly cared for by caregivers. As with other geropsychiatric in-patient units, the goals of the ROH Unit were to improve clinical and functional status, quality of life, ensure satisfaction with treatment, and reduce caregiver burden. These were accomplished through multidisciplinary interventions that were provided by psychiatrists, nurses, social workers, physiotherapists, occupational therapists, recreation therapists, clinical dieticians, and psychometrists. Some of the treatments provided included biological therapies, individual and group therapies, rehabilitation and maintenance therapies, psycho education, and family interventions. In addition, continuity of care was provided as follow-up care for patients who lived in and around the Ottawa-Carleton region.

By providing multidisciplinary treatment, pre-admission screening, family interventions, early discharge planning, and collaboration with community agencies (such as Home Care), the ROH Geriatric Psychiatry In-Patient Unit, as evaluated herein, adhered to governmental guidelines (Health & Welfare Canada, 1988; Royal College of Physicians of London, 1989). To the extent that the ROH Geriatric Psychiatry In-Patient admission criteria, goals, and services were consistent with those that have been identified in the literature in reference to geropsychiatric in-patient units, results of this evaluation may be generalized to other geropsychiatric in-patient units.

Chapter 4. EPIDEMIOLOGY OF GEROPSYCHIATRY IN-PATIENTS

Introduction

The explosive elderly boom, coupled with reductions in available resources, have brought into focus the need to characterize geropsychiatry in-patients and to identify whether geropsychiatry in-patient programs are treating, with fewer resources, an aging group that carries a disproportionate load of both psychiatric and medical impairments relative to that of their predecessors. Identifying patient characteristics and subsequent demands on geropsychiatric units is important from a service delivery and outcome perspective (Adams & Cohen, 1995). With respect to service delivery, a treatment program can only provide quality care to the extent that it understands the characteristics and needs of its clientele. From an outcome perspective, this information is needed to qualify the interpretation of outcome data.

This section reviews epidemiological studies that have provided insight into the demographic and clinical characteristics of patients who received treatment on geropsychiatric in-patient units. A summary of these studies is presented in Table 5. A secondary goal of this review is to compare remote and more recent studies in an attempt to uncover trends with regard to patient characteristics. In so doing, studies that were published over 10 years ago will be contrasted with data from studies that were published within the past 10 years. Insofar as the studies reviewed were based on units which were purported to provide multidisciplinary treatment to severely impaired psychiatric elderly patients, comparisons across

Table 5

Summary of Geropsychiatry In-Patient Epidemiological Data Published in the Past 10 Years

Study	Study setting	Sample size	Data collection years	Mean age (range)	Gender (% female)	Medical problems (%)	Primary diagnosis (%)	Primary limitations to generalizability
Weingarten et al., 1982	1 older adult unit, 1 geropsychiatry unit (total 38 beds)	49	1979	69 (40-89)	75	75	- affective disorders: 37 - organic mental disorders: 18 - psychotic disorders: 16 - other disorders: 28	- confounded data from non-geriatric unit
Gilchrist et al., 1985	geropsychiatric unit (39 beds)	100	<1984	73 (55-90)	66	n/a	- affective disorders: 50 - organic mental disorders: 33 - psychotic disorders: 9 - other disorders: 8	- included non-elderly patients
Harrison et al., 1988	geropsychiatric unit (15 acute, 64 long-term beds)	100	1985-1986	75.0 (65-91)	65	75	- affective disorders: 31 - organic mental disorders: 48 - psychotic disorders: 16 - other disorders: 5	- confounded data from long-term care beds
Ancill et al., 1988	geropsychiatric unit (number of beds n/a)	100	1985	74.5 (65-94)	44	n/a	- affective disorders: 43 - organic mental disorders: 52 - psychotic disorders: 3 - other disorders: 2	- sample biased toward nursing home patients
Zubenko et al., 1997	geropsychiatric unit (number of beds n/a)	868	1989-1993	72.8 (50-103)	67	99	- affective disorders: 38 - organic mental disorders: 48 - psychotic disorders: 10 - other disorders: 4	- included non-elderly patients

studies were deemed appropriate.

Epidemiology of geropsychiatric in-patients

Demographics. Most epidemiological studies of geropsychiatric in-patient units have reported that these patients were predominantly women (Gilchrist, Rozenbilds, Martin, & Connolly, 1985; Harrison et al., 1988; Weingarten et al., 1982; Zubenko et al., 1997) who were either widowed or divorced (Gilchrist et al., 1985; Harrison et al., 1988; Zubenko et al., 1998) and who were admitted directly from their homes (Gilchrist et al., 1985; Harrison et al, 1988). Only one study did not concur with these conclusions (Ancill, Embury, MacEwan, & Kennedy, 1988). Ancill et al. (1988) reported that the majority of their sample were males who were admitted from nursing homes. However, despite having reported on 100 consecutive admissions to their geropsychiatric unit, Ancill et al. (1988) reported that their sample my have been biased (no explanation for the bias was offered) toward nursing home males who presented with behavioural disturbances. This bias was potentially problematic in light of other findings that have reported nursing home admissions to comprise only between 2% (Harrison et al., 1988) and 18% (Kunik et al., 1996) of all geropsychiatric in-patient unit admissions and in light of the fact that males tend to be under represented in nursing homes (Kunik et al., 1996). This suggests that Ancill et al.'s (1988) sample was representative of only a minority (males) of a small segment (nursing home admissions) of the geropsychiatric in-patient population. Because of the distinctiveness of their sample, data from Ancill et al.'s (1988) study will be excluded from further discussions in this chapter.

Comparisons of data that were reported in remote and more recent studies suggest that patients who were treated 10 years ago (Gilchrist et al., 1985; Weingarten et al., 1982) were younger than patients on whom studies that were published within the past 10 years were based (Harrison et al., 1988; Zubenko et al., 1997). Specifically, consideration of the range of patient ages indicated that the oldest patients on whom remote reports were based were 90 years old (Gilchrist et al., 1985). In contrast, the oldest patients on whom reports that were published in the past 10 years were based were over the age of 90 (Harrison et al., 1988), with the most recent report suggesting that some patients admitted to these units were over the age of 100 years (Zubenko et al., 1997). Although comparisons of mean ages do not support this trend, as can be seen in Table 5, differences in mean ages appeared to be a function of the different admission criteria across units. That is, units that included the youngest patients also reported relatively low mean ages (Weingarten et al., 1982; Zubenko et al., 1997) while a study which included only patients over the age of 65 reported the highest mean age for its sample of patients (Harrison et al., 1988), This highlights the need for additional studies to provide comparisons of demographic data based on patients who were admitted with similar admission criteria.

Psychiatric profiles. Reports, as detailed in Table 5, suggest that the two single most common diagnoses applied to elderly psychiatric in-patients were major affective disorders and organic mental disorders. Of the patients who presented with affective disorders, the most commonly diagnosed syndromes were depressive disorders, accounting for between 84% (Gilchrist et al., 1985) and 94% (Harrison et al., 1988) of all affective disorders. Within organic mental disorders, the most commonly applied diagnosis was dementia, accounting for between 54% (Harrison et al., 1988) and 77% (Zubenko et al., 1997) of all organic mood disorders. Psychotic disorders (e.g. schizophrenia) accounted for between 9% (Gilchrist et al., 1985) and 16% (Harrison et al., 1988; Weingarten et al., 1982) of diagnoses. Finally, other disorders, including alcohol and substance abuse and other psychoneuroses (e.g. adjustment disorder) were less common, usually accounting for less than 5% of all diagnoses (Gilchrist et al., 1985; Harrison et al., 1988; Zubenko et al., 1997) and usually identified as secondary diagnoses to the more common depressions or dementias (Harrison et al., 1988; Weingarten et al., 1982).

Secondary diagnoses were reported in two of the studies that were reviewed (Harrison et al., 1988; Weingarten et al., 1982). Estimates of secondary diagnoses in these two studies were slightly discrepant, with Weingarten et al. (1982) reporting that 46% of their patients presented with concomitant psychiatric disorders, while Harrison et al. (1988) indicated that only 26% of their sample had multiple psychiatric disorders. Different sampling criteria, as detailed later in this chapter, likely accounted for the discrepant numbers. Despite variations in prevalence estimates, both studies concurred that dementia was the most commonly applied secondary diagnosis (usually secondary to an affective disorder) accounting for just under 50% of all secondary diagnoses in Weingarten et al.'s (1982) study, and slightly over 50% in Harrison et al.'s (1988) study. Various affective disorders, schizophrenic disorders, substance abuse disorders, and personality disorders accounted for the remaining proportion of secondary diagnoses (usually secondary to a dementia).

Comparisons of diagnostic profiles over time revealed some apparent differences. Specifically, while studies that were published over 10 years ago clearly indicated that affective disorders were more common than other syndromes (Gilchrist et al., 1985; Weingarten et al., 1982), studies published within the past ten years indicated that organic mental disorders, and in particular dementia, have surpassed affective disorders in prevalence (Harrison et al., 1988; Zubenko et al., 1997). Since the prevalence of organic mental disorders such as dementia increases with age (Jeans et al., 1987), and given that the average age of onset for an organic mental disorder was reported to be 72 years (Zubenko et al., 1997), an increase in organic mental disorders may reflect an aging population. These data might also suggest that, given increased prevalence of dementia disorders, geropsychiatric in-patient units are burdened with more complex, chronically impaired patients. However, in the absence of more detailed clinical data, including clinical risk indicators such as suicide or violence potential, measures of treatment resistance, and assessments of illness severity and/or functional impairments, and given that studies have not examined clinical differences between demented and non-demented patients, conclusions to this end remain speculative.

Medical profiles. Despite slight variations in numbers across studies, results of epidemiological reports suggested that the presence of acute or chronic medical conditions in geropsychiatric in-patients is the norm (Harrison et al,. 1988; Weingarten et al., 1982; Zubenko et al,. 1997). In fact, Zubenko et al. (1997) reported that the mean number of medical problems with which geropsychiatric in-patients presented was 5.6 (range 0-18 problems per patient) and concluded that this population was significantly medically impaired. Studies have concurred that the most common medical disorders with which geropsychiatric in-patients presented were vascular in nature, with prevalence estimates of vascular illnesses ranging from 71% (Zubenko et al., 1997) to 75% (Weingarten et al., 1982). Other common medical illnesses that have been identified by both Weingarten et al. (1982) and Zubenko et al., (1997) and ordered according to the frequency with which the most recent study by Zubenko et al. (1997) identified them were digestive disorders, endocrine/nutritional/metabolic diseases, musculoskeletal problems, diseases of the genitourinary system, respiratory illnesses, and haematological disorders.

Comparisons of studies published 10 years ago with more recent studies suggest that patients who were treated in more recent times were more medically impaired than their predecessors. Specifically, Weingarten et al. (1982) reported that 75% of their patients presented with significant medical illnesses. Although Harrison et al. (1988) reported similar proportions, the most up-to-date report by Zubenko et al. (1997) indicated that 99% of geropsychiatric patients were admitted with medical problems that required some form of intervention.

Comparing the frequencies of medical diagnoses, other than the most common vascular ailments, over time would not be meaningful because remote and more recent studies used different methodologies in their respective classifications of medical disorders (Weingarten et al., 1982; Zubenko et al., 1997). Specifically, whereas Zubenko classified medical problems according to the ICD-9-CM classification system (International Classification of Diseases, 1993), classification of medical problems in Weingarten et al.'s study were not structured according to a designated classification system. Simplifying

Weingarten et al.'s prevalence estimates according to ICD-9-CM categories was not possible because it was unclear which and how many cases reflected overlap across diagnoses. For example, while Weingarten et al. (1982) provided separate estimates of the number of patients who presented with gynaecologic and urologic disorders, Zubenko et al. (1997) grouped these disorders into a single category - genitourinary. In order to collapse Weingarten et al.'s data into ICD-9-CM categories, it would be necessary to know how many of the same patients presented with each gynaecologic and urologic disorders. This concern highlights the need for studies to make use of global diagnostic classification systems, as that used by Zubenko et al. (1997), in order to ensure meaningful comparisons of medical profiles over time.

Summary

To sum, epidemiological studies that were reviewed indicated that geropsychiatric in-patients tended to be predominantly females who required short-term admissions for treatment of depressions and/or dementias which were complicated by multiple medical problems. However, in light of reported and continued anticipated changes in the demographics and clinical profiles of the elderly and given that studies which were published in the past 10 years were based on patients that were treated almost (Zubenko et al., 1997) or over 10 years ago (Harrison et al., 1988), the need for contemporary data on elderly geropsychiatric in-patients is clear. Furthermore, the identification of clinical risk data, including suicide potential, violence potential, and history of previous hospitalization, would provide important insight with regard to the chronicity and special needs of geropsychiatric in-patients. Finally, documenting the severity of illness and the extent to which patients are impaired by their illness would serve to illuminate patient profiles and enhance our understanding of the context under which geropsychiatric in-patient treatment is provided.

Comparisons of remote and more current studies indicated that patients on whom data were reported over a decade ago (Gilchrist et al., 1985; Weingarten et al., 1982) were younger, less medically burdened, and not as likely to present with organic mental disorders, in particular dementias, as compared to studies that were published in the past 10 years (Harrison et al., 1988; Zubenko et al., 1997). Given the expectations that geropsychiatric in-patient units will treat a disproportionate number of patients suffering with dementia and given the lack of consideration to diagnostic differences in studies that have been published to date, studies are needed to assess the differential burden imposed upon these Units by demented patients, as compared to non-demented patients. This latter knowledge is important for it may serve to project the demands to which geropsychiatric in-patient units will need to respond, to better estimate the burdens under which they will increasingly be expected to operate, and to facilitate interpretation of outcome data.

Finally, despite the trends noted, methodological concerns, in particular the use of inconsistent admission criteria, render direct comparisons of these studies problematic. For example, three of the four studies (excluding Ancill et al., 1988) included data based on non-elderly patients (see Table 5) who had been admitted to geropsychiatric units (Gilchrist et al., 1985; Weingarten et al., 1982; Zubenko et al., 1997). Confounding data from elderly patients with data based on younger adults is problematic given expectations that elderly psychiatric in-patients present with special needs distinct from those of their younger counterparts. The fourth study (Harrison et al., 1988) confounded data based on acute and long-term care patients. This is problematic in light of recent evidence suggesting that long-term care treatment patients are, on average, two years older than acute care patients and that they present with different clinical profiles (Snowdon, 1993). As a result, although comparisons of these studies were useful insofar as they provided indications of potential differences over time, direct comparisons of remote and current acute care geropsychiatric in-patients, who were admitted based on similar admission criteria, are needed to verify changes in patient characteristics data over time.

Chapter 5. OUTCOME OF GEROPSYCHIATRY IN-PATIENT TREATMENT

Introduction

Outcome and effectiveness research has become a growth industry in the health sciences (Clancy & Cooper, 1997). However, outcome studies in mental health have been particularly slow to develop (Fauman, 1989). Treatment and methodological issues are most commonly cited as the culprits for the scarcity of outcome evaluations of psychiatric treatment programs (Glover, 1990; Jesse & Morgan-Williams, 1987; Turner, 1989). For example, from a treatment perspective, multi-disciplinary team work makes it difficult to pinpoint those services which are effective and those which are less effective. From a methodological standpoint, it is often difficult to select appropriate outcome measures when the population in question is inarticulate, illiterate, or cognitively impaired.

Despite these difficulties, political and economic forces dictate that outcome studies are necessary to determine treatment impacts and to develop predictive models of treatment outcomes and resource utilization. The need for outcome evaluations is particularly prominent for geropsychiatric in-patient units which, as a result of fiscal restraints and preliminary epidemiological findings, are expected to treat a growing population of frail and demented elderly with limited resources and briefer admissions. This section will review studies that have attempted to document outcomes of geropsychiatric acute in-patient care. Because geropsychiatric in-patient units are serving a growing demented population who is expected to be treatment resistant (Gurland, 1996), a secondary goal of this review is to examine differences in treatment outcomes between demented and non-demented patients. Although only scant information is provided in each study to make determinations about appropriateness of comparisons across programs, insofar as all of the programs on which outcomes were assessed were multidisciplinary in their approach to caring for mostly elderly in-patients, comparisons were deemed appropriate. This chapter will subsequently review studies that have attempted to identify variables that may serve to identify patients for whom hospitalization is most useful and studies that have attempted to predict length-of-stay.

Outcomes of geropsychiatric in-patient treatment

Although cost reduction efforts have resulted in reduced psychiatric in-patient length-of-stays and fewer available resources, and in spite of expectations that geropsychiatric in-patient units are catering to a greater demented and possibly more severely impaired population, the clinical benefits of in-patient treatment for acutely ill elderly patients have not been fully defined. Several early attempts at documenting the impacts of geropsychiatric in-patient treatment relied on single item indicators of outcome that were abstracted from psychiatric notes in clinical charts (Ancill et al., 1988; O'Connor, 1987; Weingarten et al., 1982). Based on dichotomous ratings (improved/not improved), results of these studies indicated that response to geropsychiatric in-patient treatment was favourable. However, estimates of response rates in these studies varied, ranging from 66% (Ancill et al., 1988) to 81% (O'Connor, 1987). Given that only one of these studies (O'Connor, 1987) appeared to provide clinical guidelines for improvement, differences in response rates across studies may be due to varying criteria of improvement across studies. The use of unstandardized criteria are particularly problematic given the retrospective methodologies that were used in these studies. Specifically, because psychiatric notes are often idiosyncratic in style (Coupe, 1988), reviewers in these studies may have had to rely on interpretations and inferences when abstracting data from patient records which may have introduced a potential bias, most typically toward finding improvement (Draper, 1994). These concerns highlight the need for more rigorous prospective methodologies, including the use of standardized outcome measures, to eliminate the potential of biased abstracting.

Two research groups have concentrated their efforts on prospectively assessing the impacts of geropsychiatric in-patient treatment using standardized tools. Summaries of these studies are presented in Table 6[12]. The first group was spearheaded by Zubenko (Zubenko, Rosen, Sweet, Mulsant, & Rifai, 1992; Zubenko et al., 1994) while the second group was led by Kunik (Bakey et al., 1997; Champagne et al., 1996; Kunik et al., 1996).

Zubenko's group. The first research group, spearheaded by Zubenko assessed the impacts of geropsychiatric in-patient treatment on depressed (Zubenko, et al., 1994) and demented (Zubenko et al., 1992) patients. In both studies, patients were selected from an acute care in-patient unit of a university hospital. The unit, whose physical environment was designed to "facilitate the care of frail elderly patients" (Zubenko et al., 1994, p. 988), offered multidisciplinary assessment and treatment of mental disorders in the elderly. To this end, initial attention was focused on the formulation of a comprehensive diagnosis.

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[12] Although other studies have documented outcomes of geropsychiatric care within the context of addressing related specific research questions, i.e. assessing the efficacy of a specific pharmacological intervention for certain groups of patients (e.g. Calkin, Kunik, Orengo, Molinari, & Workman, 1997) or assessing treatment impacts on caregivers (e.g. Liptzin et al., 1988), only those studies whose primary purpose was to evaluate outcomes of geropsychiatric treatment are reviewed in this chapter.

Table 6
Summary of Prospective Geropsychiatry In-Patient Outcome Studies

Study	Setting	Sample size	Inclusion criteria	Main Outcome measures	Main findings	Primary limitations to generalizability
Zubenko et al, 1994	geropsychiatry unit	205	elderly depressed patients	- HDRS	- 51% of patients respond to treatment	- non-representative sample - overly conservative treatment response criteria
Zubenko et al, 1992	geropsychiatry unit	120	patients with dementias	- HDRS - BPRS - MMSE - GAS	- improvements on all measures for most types of dementias	- non-representative sample - excluded patients who could not participate in interviews
Bakey et al., 1997	geropsychiatry unit	73	low functioning demented patients	- HDRS - BPRS - CMAI - MMSE - GAF	- improved symptoms, depression, functioning	- non-representative sample
Champagne et al., 1996	geropsychiatry unit	35	patients with psychosis	- HDRS - BPRS - MMSE - CMAI	- improved symptoms, depression - no significant differences between demented and non-demented patients	- non-representative sample - measures that did not provide meaningful group comparisons
Kunik et al., 1996	geropsychiatry unit	41	admissions from nursing homes	- HDRS - BPRS - CMAI - MMSE - GAF	- improved symptoms, depression, functioning - no significant differences between demented and non-demented patients	- non-representative sample - measures that did not provide meaningful group comparisons

Note. HDRS: Hamilton Depression Rating Scale (Hamilton, 1960)
BPRS: Brief Psychiatric Rating Scale (Overall & Gorham, 1962)
MMSE: Mini-Mental State Examination (Folstein, Folstein, & McHugh, 1975)
GAF: Global Assessment of Functioning (APA, 1994)
GAS: Global Assessment Scale (Endicott, Spitzer, & Fleiss, & Cohen, 1976)
CMAI: Cohen-Mansfield Agitation Inventory (Cohen-Mansfield, Marx, & Rosenthal, 1989)

Consistent with the multidimensional approach to treatment in geropsychiatric in-patient units, patients who were evaluated by Zubenko's group were reported to have been treated with pharmacotherapy, individual and group psychotherapy, and behavioural techniques.

In one study, Zubenko et al. (1994) used the Hamilton Depression Rating Scale (Hamilton, 1960) to assess depressed elderly patients' responses to their geropsychiatric in-patient treatment. Using the criterion of a scale score below 10 at discharge, the customary criterion used for complete response to treatment among elderly patients (Georgotas et al., 1986; Hinrichsen, 1992; Reynolds et al., 1992), 45.9% of patients were categorized as good responders. Another 5.4%, who did not score below 10 on the Hamilton Depression Rating Scale but experienced at least a 50% reduction in total score, were classified as partial responders. Finally, almost half of the patients (48.8%) who did not meet either criteria were classified as non-responders.

Several lines of evidence suggest that the classification scheme used by Zubenko et al. (1994) may have underestimated patients' treatment responses. First, Zubenko et al.'s (1994) patients were treated with combinations of somatic and psychosocial interventions which, in combination, are expected to have additive or synergistic effects (Reynolds et al., 1992). Despite this, Zubenko et al.'s findings indicated less favourable outcomes than the 60% response rate that are typically observed in depressed elderly clinical drug trials (NIH Consensus Conference, 1992) and the 70%-80% response usually observed with electroconvulsive treatment (Mulsant, Rosen, Thorton, & Zubenko, 1991; NIH Consensus Conference, 1992). Zubenko et al.'s (1994) findings also indicated a lower response rate than the 72% recovery rate that was reported in a study of elderly depressed in-patients who were treated in a general psychiatry ward (Hinrichsen, 1992), despite the expectations that geropsychiatric in-patient units should be better equipped to deal with the special needs of the elderly and therefore may be expected to achieve better outcomes (Rivard & Potoczny, 1996). Finally, although Zubenko et al. (1994) calculation of effect sizes, based on means and standard deviations of the Hamilton Depression Rating Scale (Hamilton, 1960), indicated that patients actually responded very well to treatment ($r^2 = .77$).

Closer scrutiny of Zubenko et al.'s (1994) data suggested that their response rate may have underestimated treatment impacts because their classification scheme was too conservative given the average length-of-stay and/or that their outcome criteria did not properly represent their treatment goals. Specifically, at least 80% of their depressed patients were treated, in a mean of 30 days, with antidepressants and/or neuroleptics. Yet, and as acknowledged by Zubenko et al. (1994) the optimal response to antidepressant and neuroleptic therapy is reported to occur 1-2 months after the establishment of optimal doses (Balderssarini, 1985; Georgotas et al., 1986; NIH Consensus Conference, 1992). Thus the mean of 30 days length-of-stay reported by Zubenko et al. (1994) may not have been sufficient to reduce Hamilton Rating Scale for Depression scores to below 10. Indeed, Zubenko et al. (1992) reported that the goal of their short term in-patient treatment program was the "completion of a thorough diagnostic assessment and the initiation of a comprehensive treatment plan" (p. 1490), suggesting that complete remission should not be the criteria for good outcome. Related, given that the goals of short term psychiatric in-patient treatment are multifaceted (World Health Organization, 1991), consideration of outcomes other than depressive symptomatology may have led to different response classifications. For example, although depressive symptoms may not have achieved great resolution over the course of treatment, significant gains may have been achieved in other areas, such as functioning and quality of life, all of which should be considered in making global determinations of outcome. Finally, given that many patients were discharged prior to achieving full response status, consideration of the specific symptoms that responded well to short term in-patient treatment and those that did not remit during the admission may have enhanced the clinical utility of the study, while follow-up analyses may have been useful to identify longer-term treatment impacts.

In a second study, Zubenko et al. (1992) assessed the multidimensional impacts of geropsychiatric in-patient treatment in a sample of 120 patients with dementias (at least 37 of whom also presented with clinical depression). Included in the outcome battery were measures of cognitive impairment (Mini-Mental State Exam; Folstein et al., 1975), psychopathology (Brief Psychiatric Rating Scale; Overall & Gorham, 1962), depression (Hamilton Depression Rating Scale; Hamilton, 1960), and general functioning (Global Assessment Scale; Endicott et al., 1976). Results of this study indicated that demented patients responded well in all areas to geropsychiatric in-patient treatment (mean $\underline{r}^2$ = .38). However, as the authors point out, "The interpretation of...quantitative assessments of response to in-patient treatment is...limited by the exclusion of patients who were unable to participate in the assessments at admission or discharge" (p. 1490). The extent of this problem was considerable as is reflected in the fact that, with the exception of the Global Assessment Scale, which could be completed based on observations and interviews with significant others, paired observations were missing on upwards of 30% of patients. Whether patients who were unable to participate in the interviews might have experienced different outcomes is unclear, although it is reasonable to assume that patients who were unable to participate in psychiatric interviews may also have been unable to participate actively in treatment and may have, consequently, not benefited as much from treatment. This highlights the problem of relying heavily on clinical measures that require patient cooperation when patients are inarticulate or very impaired.

Kunik's group. Kunik and colleagues also explored, using measures similar to those used by Zubenko et al. (1992), the multidimensional impacts of geropsychiatry in-patient care. In each study, different subsamples of male geropsychiatric in-patients who were treated on the same geropsychiatric in-patient unit were examined (with the exception of Bakey et al. who included 1 female in their sample). Specifically, Bakey et al. (1997) examined treatment impacts in 73 demented patients who were rated on the Global Assessment of Functioning scale (APA, 1994) to be very low functioning. Champagne et al. (1996) studied 35 patients who presented with psychosis on admission (14 for whom the psychosis was secondary to a dementia). Finally, Kunik et al. (1996) investigated treatment impacts in 41 patients who were admitted from nursing homes (19 of whom were diagnosed with a dementia). Patients received multidisciplinary evaluation and treatment from a team that consisted of geriatric psychiatrists, a geropsychologist, psychiatric nurses, a social worker and a physician assistant. Although all patients received pharmacotherapy, the extent to which they were provided with other non-pharmacologic interventions was not specified.

Results of these studies indicated that cognitive impairment, as measured by the Mini-Mental State Exam (Folstein et al., 1975) was not significantly affected by treatment. However, significant improvements were noted in psychopathology and general functioning. Mean effect sizes for the common measures of psychopathology across these studies, the Hamilton Depression Rating Scale (Hamilton, 1960) and the Brief Psychiatric Rating Scale (Overall & Gorham, 1962) ranged from $r^2 = .18$ (Champagne et al., 1996) to $r^2 = .44$ (Bakey et al., 1996). Effect sizes for the measure of functioning that was common in two of these studies, the Global Assessment of Functioning scale (APA, 1994), indicated slightly greater effects, ranging from $r^2 = .29$ (Kunik et al., 1996) to $r^2 = .58$ (Bakey et al., 1996). Thus, while studies in this group reported similar conclusions, the size of treatment impacts varied across the different patient samples. Variability in effect sizes may also reflect that, despite having been treated on the same geropsychiatric in-patient unit, patients across these studies may have received different treatment opportunities. However, lack of information in these studies makes it impossible to fully appreciate what treatments were provided to the patients, highlighting the need for outcome studies to provide more detailed descriptions of treatment protocols. Further, although these studies reported relatively low rates of non-participation (compared to Zubenko et al.'s 1992 study), concerns regarding the use of clinical tools that require patient participation in clinical interviews may also apply to these studies.

Two of the studies reported by Kunik's group also compared outcomes for demented and non-demented patients (Champagne et al., 1996; Kunik et al., 1996). Although the generalizability of the findings to demented and non-demented geropsychiatric in-patients may be limited due to the specific subsamples that were used in these studies, results of these comparisons indicated that the only measure upon which the groups differed significantly was the Cohen-Mansfield Agitation Inventory (Cohen-Mansfield et al., 1989). In this regard, demented nursing home patients demonstrated greater reductions in agitation than their non-demented counterparts (Kunik et al., 1996)[13]. However, this finding is unremarkable given that demented patients were admitted with high levels of agitation while agitation was not a common experience of non-demented patients. This suggests that the

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[13] Champagne et al. (1996) reported that demented and non-demented patients change scores were significantly different for the Anergia subscale of the Brief Psychiatric Rating Scale (Overall & Gorham, 1962), however, their reported mean change scores and standard deviations of change (-1.2 ± 5.6 and -.8 ± 3.1) and subsequent t-value (reported and confirmed to be .27) should not have led to a rejection of their null hypothesis.

measures used in these studies may not have been appropriate tools on which to base group comparisons.

Lack of significant differences between demented and non-demented patients on the remaining measures in these studies is surprising given that another study which compared outcomes of demented and non-demented patients who were treated on a general psychiatry unit of a general hospital concluded that the non-demented elderly were twice as likely to respond well to treatment as demented patients (Draper, 1994). Clinical trial data also suggests that although many psychiatric illnesses in the elderly are quite responsive to treatment, including mood disorders (Georgotas et al., 1986; Mulsant, Rosen, Thorton, & Zubenko, 1991; NIH Consensus Conference, 1992) and psychotic disorders (see Lacro, Pharm, Dilip, & Jeste, 1997 for a review), and despite the finding that some of the behavioural symptom and syndromes that often accompany dementia have been found to respond well to pharmacologic and psychosocial treatments (Jenike, 1985; Reynolds, Perel, Kupfer, Zimmer, Stack, & Hoch, 1987; Wragg & Jeste, 1989), no effective treatments for ameliorating the symptoms of cognitive impairment associated with a dementia have been reported (Gurland, 1996). Thus, general prognosis for patients with dementia was expected to be less favourable than for non-demented patients, suggesting that closer scrutiny of Champagne et al.'s (1996) and Kunik et al.'s (1996) data were warranted.

Closer examination of the data that were provided by Champagne et al. (1996) and Kunik et al. (1996) indicated that with the exception of cognitive impairment (based on the Mini-Mental State Exam; Overall & Gorham, 1962) which reflected minimal dysfunction from the outset, non-demented patients improved significantly in all areas. In contrast, although demented patients presented with high Mini-Mental State Exam (Folstein et al., 1975) scores on admission, improvement over time was not significant. However, results of these studies indicated that demented patients did experience significant improvements in depressive symptoms (the Hamilton Depression Rating Scale; Hamilton, 1960) agitation (the Cohen-Mansfield Agitation Inventory; Cohen-Mansfield et al., 1989), and overall functioning (the Global Assessment of Functioning scale; APA, 1994). Finally, although overall psychopathology was reported to have improved significantly in demented nursing home patients (Kunik et al., 1996), no significant gains were noted in demented psychotic patients (Champagne et al., 1996), a finding which corroborates clinical drug trial findings that psychosis confers a worse prognosis on demented patients (Drevets & Rubin, 1989; Rosen & Zubenko, 1991; Zubenko & Moossy, 1988). These finding are consistent with clinical drug studies (Gurland, 1996, Jenike, 1985; Reynolds et al., 1987; Wragg & Jeste, 1989) in suggesting that the behavioural symptoms and syndromes associated with a dementia may respond well to treatment but that cognitive impairment and overall psychopathology may be more treatment resistant. These data further suggest that, despite Kunik et al.'s group having reported non-significant group differences, response to treatment was in fact not uniform across demented and non-demented patients.

Lack of significant group differences reported by Champagne et al. (1996) and Kunik et al. (1996), despite some differences in treatment outcomes in demented and non-demented patients, may be attributable to the use of measures that may not have provided meaningful comparisons across diagnostic groupings. Indeed, given that cognitive impairment was uncommon in non-demented patients, comparing treatment efficacy for these patients using a tool such as the Mini-Mental State Exam (Folstein et al., 1975) may not be meaningful. Similarly, syndrome specific measures such as the Hamilton Depression Rating Scale (Hamilton, 1960) and the Cohen-Mansfield Agitation Inventory (Cohen-Mansfield et al., 1989) are designed to detect minimally important changes that are unique to the condition but do not permit comparisons across conditions as well as generic measures (Clancy & Cooper, 1997). In contrast, the Global Assessment of Functioning scale (APA, 1994) and the Brief Psychiatric Rating Scale (Overall & Gorham, 1962) are more generic measures of outcome. However, because the Global Assessment of Functioning scale (APA, 1994) correlates highly with measures of both illness severity and functioning, its validity as an independent measure of functioning and its ability to detect subtle changes and group differences in specific areas of functioning may be inadequate (Roy-Byrne, Dagadakis, Unutzer, & Ries, 1995). To this end, and because cognitive impairment would be expected to impede specific facets of functioning (such as ability to perform activities of daily living or social functioning), more specific measures of functioning may have resulted in significant group differences. Similarly, outcomes based on the Brief Psychiatric Rating Scale

(Overall & Gorham, 1962) may have questionable validity because the scale requires raters to judge both the frequency and intensity of symptoms to adequately select levels of severity which may render it "ambiguous and difficult-to-use" (Roy-Byrne et al., 1996, p. 349). Indeed, examination of inter-rater reliability estimates in two of the studies that have come out of Kunik's research group have indicated relatively low (.60) inter-rater reliability estimates for the Brief Psychiatric Rating Scale (Bakey et al., 1997; Kunik et al., 1996). Thus, the possibility that significant group differences might have been found had more meaningful and sensitive outcome measures been used cannot be ruled out.

Summary of outcome studies. To sum, two research groups have concentrated on assessing and documenting outcomes of geropsychiatry in-patient care. Results that have come out of both groups have indicated that outcome of geropsychiatric in-patient treatment is favourable. Calculations of mean effect sizes, based on measures of psychopathology and functioning in these studies, indicated moderate effects in Kunik and colleagues' use of psychotic, low functioning demented, and patients admitted from nursing homes ($\underline{M}$ $r^2 = .35$) and even greater effects when Zubenko and his colleagues assessed impacts in depressed and demented patients ($\underline{M}$ $r^2 = .57$). However, improvement in cognitive impairment was reported only by Zubenko et al. (1992). Differences in study findings and effect sizes are most likely attributable to a combination of factors, including the use of specific samples in Kunik's group that may not be representative of other geropsychiatric in-patients, the high rate of missing data in

Zubenko et al.'s (1994) study which may have biased findings, and different treatment opportunities. Finally, it was suggested that since psychiatric illnesses would not be expected to remit over the course of a short-term hospitalization, consideration of residual symptoms and long-term treatment impacts may have enhanced the clinical utility of these studies.

Results of the two studies that have provided comparisons across different diagnostic groups suggested that demented and non-demented patients did not differ significantly in their response to treatment (Champagne et al., 1996; Kunik et al., 1996). However, closer analyses of their findings indicated that the prognosis for demented patients in terms of psychopathology and cognitive impairment was not as favourable as that of non-demented patients and suggested that lack of significant group differences in these studies may have been attributed to the use of inappropriate outcome measures. While comparisons of effect sizes across Zubenko et al.'s studies (Zubenko et al., 1994; Zubenko et al., 1994) may have been useful in determining the relative impact of treatment for demented versus non-demented (depressed) patients, the inclusion in Zubenko et al.'s (1994) of depressed patients who may have had a secondary condition of dementia did not allow for clear diagnostic distinctions. Moreover, had such analyses been meaningful, the only common measure used in their two studies was the Hamilton Depression Rating Scale, a measure of depression which would not capture the disease-specific changes in dementia symptoms. These limitations highlight the need for studies to provide direct comparisons of geropsychiatric demented and non-demented patients using outcome indicators that are appropriate for patients with a wide range of diagnoses and clinical presentations (Burlingame, Lambert, Reisinger, Neff, & Mosier, 1995) and which are likely to accurately reflect program goals. To this end, comprehensive outcome packages should include, in addition to the clinical and functional measures included in some of the outcome studies reviewed herein, measures of quality of life and satisfaction with treatment (Graham et al., 1994; World Health Organization, 1991).

Variables that influence outcome of geropsychiatric in-patient treatment

As reviewed above, response to geropsychiatric in-patient treatment is less than unanimous (not all patients respond well to treatment). Such variability in treatment outcomes within a cost-conscious mental health environment (wherein fiscal restraints dictate that not all who may require hospitalization will receive it), highlights the need to identify those patients who are most likely to benefit from in-patient care.

Only two studies were identified in the geriatric literature that endeavoured to identify the variables that would predict outcome of psychiatric in-patient care (Lyons et al., 1995a; Zubenko et al., 1994). Zubenko et al. (1994) developed a multivariate model to identify which of a number of sociodemographic (n=7) and clinical (n=11) variables contributed to the prediction of therapeutic responses to geropsychiatric treatment among depressed elderly in-patients[14]. They also

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[14] A brief description of the program was provided in the previous section.

included, as potential predictors, the treatment variables length-of-stay and use of electroconvulsive therapy. Response to treatment was evaluated using discharge Hamilton Depression Rating Scale (Hamilton, 1960) scores. As reviewed in the previous section, patients whose discharge Hamilton Depression Rating Scale (Hamilton, 1960) score was lower than, or equal to, 10 were categorized as responders (n=94), while those whose admission-discharge scores changed by over 50% but did not reach 10 were listed as partial responders (n=11). All other patients were categorized as nonresponders (n=100). Zubenko et al. (1994) used a logistic regression technique to identify a best-fitting model to predict the assignment of patients to the response and nonresponse categories (eliminating partial responders).

Results indicated that being black, having better cognitive functioning on the Mini Mental Status Examination (Folstein et al., 1975), having fewer medical problems on admission, receiving treatment with ECT, and shorter hospitalization were associated with a better response to in-patient treatment. The variables that did not predict treatment outcome for depressed patients in this study included clinical indicators of illness severity, such as suicide potential and severity of symptoms on admission.

Zubenko et al. (1994) suggested that depressed Caucasians responded less favourably to treatment because they had better insurance coverage and had received, as outpatients, more vigorous antidepressant treatment, resulting in a higher proportion of patients who presented with treatment-resistant depressions.

Although direct measures of treatment resistance were not employed in this study, Zubenko et al.'s theory is consistent with studies that have suggested that patients who present with treatment resistant psychiatric illnesses are less likely to experience favourable treatment outcomes (Bonner & Howard, 1995). Zubenko et al. (1994) also offered a couple interpretations for why cognitive functioning and medical burden were important predictors of outcome. They suggested that patients who presented with cognitive dysfunction may have been in the early stages of a degenerative brain disorder, namely dementia, and that perhaps the presence of a dementia was what contributed most to outcome. They alternately suggested that patient characteristics, such as cognitive and medical dysfunction, interfered with patients' ability to participate in, and subsequently benefit from, the psychosocial interventions. However, given that they did not provide a measure of degree of participation in treatment, nor did they screen patients for dementia, they were not able to test these hypotheses. Finally, although the treatment related variables, length-of-stay and use of electroconvulsive therapy, were useful in predicting treatment outcome, they would not be useful in identifying, prospectively, patients who are likely to benefit the most from hospitalization.

Although the generalizability of the results of Zubenko et al.'s (1994) study may be limited, due to their exclusion of patients who did not have a depressive disorder, and despite the fact that the classification system that they used to categorize patients as responders or non-responders may have been overly conservative (as discussed in the previous section), this study was the first to identify patient characteristics that might be important in making determinations about whether a patient is likely to benefit from geropsychiatric in-patient treatment.

A second study (Lyons et al., 1995a) went beyond that of Zubenko et al. (1994) by including a heterogeneous group of patients and making use of predictors that reflected patient characteristics believed to impact on decisions to admit patients and the subsequent course of in-patient treatment. Patients that were included in the study represented various diagnostic groupings and three separate treatment units, including an older adult (minimum age requirement of 55 years) program in-patient unit and two general adult units[15]. Treatment outcomes were assessed using several measures. Depressive symptomatology was assessed using the Hamilton Depression Rating Scale (Hamilton, 1960) and the self-rated Geriatric Depression Scale (Yesavage, Rose, & Lapp, 1981). Impaired cognitive functioning was assessed using the Brief Cognitive Rating Scale (Reisberg & Ferris, 1988) and the Mini Mental Status Examination (Folstein et al., 1975). Finally, severity of psychiatric behaviours were assessed using the Brief Psychiatric Rating Scale (Overall & Gotham, 1962). A total of nine predictors, were examined: suicide potential, violence potential, level of self care, medical complications, presence of substance abuse, social complications, participation in treatment, severity of symptoms, and premorbid level of dysfunction (as a measure of treatment resistance).

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[15] No program descriptions were offered.

Lyons et al. (1995a) reported that patients' levels of activities of daily living functioning on admission, medical complications, participation in treatment, and premorbid level of dysfunction were all significant predictors of clinical outcome. However, directions of relationships and the magnitude of respective relationships were not provided, nor was it made clear what outcome these variables impacted on. In fact, in the context of elaborating on directions and magnitudes of specific relationships, Lyons et al. (1995a) reported that a higher rating for suicide potential predicted a worse outcome on the Hamilton Depression Rating Scale (Hamilton, 1960); a more impaired level of self-care predicted a worse outcome on the Mini-Mental State Exam (Folstein et al., 1975); higher levels of substance abuse complications predicted worse outcome on the Geriatric Depression Scale (Yesavage et al., 1981) and; a higher rating for social complications was associated with a worse outcome on the Brief Cognitive Rating Scale (Reisberg & Ferris, 1988). Even more confusing, the authors identified predictive relationships in their discussion that did not concur with those that had been reported in their results, including the addition of yet another potentially significant predictor of outcome, severity of symptoms. Results of this study, then, implicated at least some of the following as predictors of treatment outcome: activities of daily living, medical complications, premorbid level of dysfunction, suicide potential, substance abuse comorbidity, social complications, severity of symptoms, and participation in treatment.

Although Lyons et al. (1995a) reported that they analysed their data using regression techniques, they presented no statistical evidence of relationships other than simple correlations, making it impossible to decipher from their data which of their competing findings should be given more credence. Moreover, although Lyons et al.'s (1995a) study is credited with highlighting the importance of understanding clinical factors that impact on geropsychiatric treatment outcome, they offered no conceptual explanations for their selection of variables or their findings. However, to the extent that participation in treatment was predictive of treatment outcome, their findings provided partial support to Zubenko et al.'s (1994) contention that participation in treatment is important in determining patient outcomes.

Given conflicting results, and because Lyons et al. (1995a) did not examine the potential mediating influence of participation in the patient characteristics-treatment outcome relationship, additional examinations of these relationships are warranted. Moreover, given that geropsychiatric in-patients present with special needs, including, for example, high levels of comorbid medical problems (Zubenko et al., 1997) and high rates of dementia (Harrison et al., 1988; Zubenko et al., 1997) that may complicate treatment outcomes, the generalizability of Lyons et al.'s findings (which were based on data that were combined data from patients who were treated on an older in-patient unit and two general non-age segregated units) to geropsychiatric in-patients is questionable. This further highlights the need for replications of this study and suggests that this be done using a more homogeneous sample of geropsychiatric in-patients.

Summary of studies that have predicted treatment outcomes. To sum, predictive models are needed to identify patients who might benefit the most from hospitalization. Using geropsychiatric depressed in-patients, Zubenko et al. (1994) concluded that patients who were treatment resistant, medically burdened, and cognitively impaired experienced relatively poor outcomes. Although Zubenko et al. (1994) concluded that being cognitively impaired may have been indicative of having a dementia and that the combination of being cognitively and medically impaired may have impeded participation in treatment, additional studies, using more representative geropsychiatric in-patient samples were needed to verify the generalizability of these findings and validate these hypotheses.

Lyons et al. (1995a) considered patients with diagnoses other than depressions, and they included a measure of participation in treatment in their attempt to predict multifaceted outcomes in patients who were treated on geropsychiatric in-patient units and general psychiatric wards. Lyons et al. (1995a) concurred with Zubenko et al. (1994) that medical burden, participation in treatment, and treatment resistance were important predictors of treatment outcome. Lyons et al. (1995a) also identified other clinical factors that might predict outcome of geropsychiatric in-patient treatment, including suicide potential, violence potential, level of self care, presence of substance abuse, social complications, and severity of symptoms.

Discrepant results with regard to the importance of certain predictors and methodological concerns in Lyons et al.'s (1995a) study suggest that the predictive utility of the clinical factors identified therein merits further investigation. Further, although Zubenko et al. (1994) suggested that the relationship between clinical factors in depressed elderly and treatment outcome were related to dementia status and participation in treatment, these hypotheses were not directly assessed by either study and require further consideration in diagnostically heterogeneous geropsychiatric in-patients.

Variables that predict geropsychiatric in-patient resource utilization

Today's health care system is experiencing a shift toward prospective funding, wherein hospitals are to receive funding based on the numbers and types of cases that they serve, rather than providing an annual global budget. The result has been an increased interest in predicting psychiatric in-patient resource use, or, more typically, length-of-stay[16]. Predicting length-of-stay among elderly geropsychiatric patients is a particular local concern given that the elderly currently consume over half of all mental health beds in the Ottawa-Carleton area (Ministry of Health, 1994) and that their need for geropsychiatric in-patient treatment is expected to grow as the elderly population continues to boom. Clinically, projecting length-of-stay may assist programs in providing interventions that may ensure optimal treatment responses with the most efficient length-of-stays.

Only one study has attempted to examine variables that predicted resource

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[16] While the actual cost of treatment is the ideal criterion for assessing resource use, because Canadian hospitals do not record case-specific costs (and US hospitals are more likely to record patient charge data than cost data), it has become standard practice to use length-of-stay as a proxy for resource utilization (Halpine & Ashworth, 1994). To this end, the correlation between length-of-stay and cost of care has been reported to be as high as .96 (Stoskopf & Horn, 1991).

use for elderly psychiatric in-patients (Lyons et al., 1995a). As reviewed above, Lyons et al.'s (1995a) sample consisted of elderly patients who were treated on an older adult (minimum age requirement of 55 years) in-patient unit or two general adult units. The variables used to predict length-of-stay were as identified above in relation to predicting treatment outcome and included suicide risk, danger to others, activities of daily living, substance abuse comorbidities, medical burden, social factors, severity of symptoms, premorbid level of dysfunction, and participation in treatment during the first week of admission.

Using these nine predictors, Lyons et al. were able to account for only 9% of the variability in length-of-stay. Two of the nine predictors contributed significantly to the prediction model, substance abuse and severity of symptoms. Specifically, lower levels of substance abuse and being more symptomatic on admission predicted longer length-of-stays. Further, although a significant zero-order correlation was found between level of self-care and length-of-stay, this predictor did not contribute significantly to the multivariate prediction model. When only patients who were discharged to their homes were considered, the proportion of explained variability in length-of-stay increased to 23%, with results suggesting that the most important predictors in this model were medical complications, premorbid level of functioning, substance abuse, participation in treatment, and severity of symptoms. That is, patients who were active participants in treatment and who presented with greater medical problems and severity of symptoms on admission, relatively high dysfunction in the year preceding admission, and no

Although social complications, suicide risk, and violence potential did not contribute to either of Lyons et al.'s (1995a) predictive models, studies using all non-elderly patients suggest that they merit further consideration with the elderly. Specifically, although Lyons et al. concluded that social complications (based on speculations of what the patients' home life was like) did not predict length-of-stay, the relationship between social support, typically operationalized as marital status, and length-of-stay, has been well documented in the non-elderly (Stoskopf & Horn, 1992). To this end, studies have found that being married may result in clinicians discharging sooner because the patient has support for care at home. However, marital status may not be very relevant to the elderly, many of whom may be widowed and living with other relatives (e.g. children) or married but living away from their spouse (i.e. in a long-term care facility). Given this, a measure that may be more appropriate in predicting length-of-stay for the elderly than social complexity or marital status may be consideration of whether the patient lives alone or whether s/he lives with others (a spouse, other family members, or in a long-term care facility). Similarly, although suicide risk and violence potential did not predict length-of-stay in Lyons et al.'s (1995a) study, their potential as indicators of treatment complexity and their relationship to length-of-stay in studies that have used non-elderly patients (Lyons et al., 1995b; Munley et al., 1977; Schwab & Lahameyer, 1979) suggest that they require further consideration with the elderly.

Methodological concerns with Lyons et al.'s (1995a) study further suggest that additional studies are needed to elucidate the variables that predict length of geropsychiatric in-patient admissions. To begin, as reviewed earlier, combining results of patients who were treated on two general units with those who were treated on a geropsychiatric in-patient unit may, due to the special needs of the elderly, limit the generalizability of Lyons et al.'s (1995a) findings to other geropsychiatric in-patient units. Moreover, the inclusion of a predictor that was not likely to be based on data that was available on admission (participation in treatment) may limit the utility of Lyons et al.'s (1995a) findings to a prospectively funded system. Similarly, although Lyons et al. (1995a) reported that increasing patient homogeneity by grouping patients according to post-discharge residence resulted in greater predictability of length-of-stay, the utility of this categorization may be limited in a system of payment that requires prediction of length-of-stay based on data that are available on admission. In contrast, based on the assumption that demented patients are less likely, due to the irreversibility of their illness, to benefit from prolonged hospitalization (Snowdon, 1993) and given that studies in general psychiatric in-patient units have reported that patients with dementias tend to be treated with relatively short length-of-stays (Conwell et al., 1989; Draper, 1994; Snowdon, 1993), consideration of whether a patient presented with a dementia may have increased the prospective feasibility and predictability of length-of-stay in Lyons et al.'s (1995a) study.

Summary of study that attempted to predict length-of-stay. To sum, although the generalizability of Lyons et al.'s (1995a) findings to geropsychiatric in-patient units may be limited, they reported that several clinical variables interacted to predict 9% of the variability in length-of-stay for patients who were treated in general and age-segregated psychiatric in-patient units. To this end, impaired activities of daily living, high levels of medical complications, poor premorbid level of dysfunction, substance abuse comorbidity, severe symptoms, and good participation in treatment were all predictive of longer length-of-stay. However, it was suggested that a predictive model based on variables that were not available on admission, such as participation in treatment, was not useful for a prospectively funded system. Moreover, given that studies using non-elderly patients have implicated risk of suicide, violence potential, and social situation in the prediction of length-of-stay, additional studies to examine their utility with geriatric in-patients are warranted. Of particular relevance to the elderly, with regard to the latter, is whether they live alone or with others. Further, although classifying patients according to their post-discharge residence improved the predictability of length-of-stay by 14%, a more appropriate means of improving predictability, given the population and the need for data that are available on admission, may be to consider patients' dementia status. These considerations suggest that predicting mental health utilization in the elderly is likely a complex task and that evaluations endeavouring to undertake this task should examine the combined influences of diagnostic, clinical, and demographic variables.

Chapter 6. IMPACT OF GEROPSYCHIATRY IN-PATIENT TREATMENT: CAREGIVER RESPONSE

As a result of deinstitutionalisation, the role of caregivers has gained prominence in the mental health literature over the past 35 years (Loukissa, 1995). The reason behind this increased interest stems from the belief that community-based movements and increased pressure toward shorter in-patient admissions are forcing families not only to provide basic caregiving services but also to handle disruptive symptoms that did not get resolved during hospitalization (Pepper & Ryglewicz, 1984). In this regard, consideration of caregivers of the elderly mentally ill is particularly important for two reasons. First, as the elderly mentally ill population continues to explode in proportion to the elderly boom, so too will the need for informal caregivers to assume responsibility for their frail relatives. Second, studies suggest that caregivers of the mentally ill elderly experience disproportionate numbers of problems associated with caring for their family member (Grad & Sainsbury, 1963) and that caring for a demented elderly relative may be particularly stressful (Brody, 1989; Farran, Keane-Hagerty, Tatarowitz, & Scorza, 1993; Grad & Sainsbury, 1963). Some of the more common problems that caregivers experience as a consequence of the stress associated with caregiving include physical, financial, and emotional strain (D. Cohen & Eisdorfer, 1988; Schultz et al., 1988). These strains have been collectively called caregiver burden (Loring Crispi, Schiaffino, & Berman, 1997).

In response to increased awareness of caregiver burden, a growing literature has emerged which suggests that family caregivers who participate in psycho-educational groups (Falloon & Pederson, 1985; Kane, DiMartino, & Jimenez, 1990; Sidley, Smith, & Howell, 1991) and support groups (Goynea, 1990; Kane et al., 1990) experience significant reductions in caregiver burden. More recently, and as a result of a shift in mental health treatment paradigms emphasizing the need for professional and family collaborations and stressing open communication, shared decision-making, and ongoing support (Bernheim, 1990), studies have also begun exploring the potential of professional support provided within the context of a relative's treatment program in reducing caregiver burden (Reinhard, 1994). Within this context, professional support is operationalized as ongoing formal and informal interventions distinct from structured support groups, and including brief communications, the provision of educational materials, and structured family meetings (Reinhard, 1993). As exemplified by Reinhard (1994), support may be instrumental, as when staff provide families with "practical techniques for dealing with aberrant behaviours" (p. 80) or the provision of psychoeducation (Gerace, 1988). Support may also be affective, as when staff provide "empathy and respect for the family's concerns and opinions regarding the patients' ongoing rehabilitation" (Reinhard, 1994, p. 80). The assumption behind the promotion of professional support is that family members are competent persons who may lack the necessary information and support to successfully cope with their caregiving responsibilities and that by promoting staff-family collaborations, caregiver needs will be addressed, caregiver capacities will be strengthened (Bernheim, 1990), and burden will be reduced (Reinhard, 1993). To date, however, the evidence to support these claims is weak.

A preliminary correlational study provided only partial support to the hypothesis that caregivers of the mentally ill benefit from the support provided by mental health professionals during the course of their relative's treatment (Reinhard, 1994). Reinhard (1994) studied 94 caregivers of severely mentally ill persons (mostly schizophrenics) who were enrolled in a community-based rehabilitation program. The Professional Support scale (Reinhard, 1994) was used to assess the extent to which caregivers perceived that they had received different types of instrumental and affective support from staff. The Burden Assessment Scale (Reinhard, Gubman, Horwitz, & Minsky, 1994) was used to assess caregivers' objective and subjective burden. Reinhard failed to find a significant predictive relationship between support and either overall or subjective burden. However results indicated that specific facets of professional support (i.e. practical advice) selectively predicted caregivers' objective burden. The author concluded that practical advice on managing disruptive behaviours reduced objective, but not subjective burden.

Because Reinhard's (1994) study did not provide a baseline measure of burden, statements regarding the efficacy of professional support in reducing objective burden were premature. In addition, lack of a pre-treatment assessment does not rule out the possibility that non-significant relationships between support and overall objective and subjective burden were a function of low caregiver burden scores being low prior to treatment, a situation which may have created floor effects that did not permit for adequate variability in scores when caregivers were assessed. Additionally, because caregivers of elderly psychiatric in-patients have been reported to experience a disproportionate amount of burden associated with their caregiving role (Grad & Sainsbury, 1963), the generalizability of Reinhard's findings to burden experiences of caregivers of elderly geropsychiatric patients is suspect. Related, given the potential for differences in burden experiences as a function of the patients' demographic and clinical status, it stands to reason that the impact of different types of professional support on burden in caregivers of the elderly might differ from impacts observed in caregivers of non-elderly patients. In particular, given the propensity for subjective burden in caregivers of the demented elderly, including the need to make adjustments in their attachment relationship to their ill relative, modifying their needs and opportunities both for emotional closeness, and preparation for their relative's death (Mullen, 1992; Ronch, 1989), these caregivers might be expected to be particularly responsive to affective types of support.

Only one study has empirically assessed changes in caregiver burden associated with psychiatric in-patient treatment of an elderly relative (Liptzin et al., 1988). Liptzin et al. (1988) examined caregiver burden in 11 relatives of elderly patients with dementias and 27 relatives of depressed elderly patients. Assessments of caregiver burden, based on the Burden Interview (Zarit, Reever, & Bach-Peterson, 1980; Zarit, Todd, & Zarit, 1986), were made when the care recipient was admitted to hospital and two months post-discharge. Liptzin et al. (1988) hypothesized that because depression is a treatable illness and dementia is usually irreversible, depressed patients would improve more during hospitalization and that their relative's burden would be correspondingly reduced.

Liptzin et al. (1988) found no significant differences in overall level of caregiver burden in relatives of patients with depression versus dementia on admission. However, closer scrutiny of scores on admission revealed that caregivers of demented patients reported higher levels of stress on 12 of the 19 burden items[17]. Assessments at discharge confirmed that depressed patients experienced significantly greater clinical improvements than demented patients. Yet, despite differences in patient outcomes, caregivers of demented and depressed patients did not differ significantly in terms of overall burden scores at follow-up, nor did either group experience significant reductions in overall burden from admission to follow-up. However, more detailed examinations of individual burden items at follow-up revealed that, compared to caregivers of demented patients, caregivers of depressed patients experienced significantly more burden with respect to the individual items pertaining to feeling guilty about interactions with the relative, being angry about interactions with the relative, being afraid of the future for the relative, and causing a negative effect on their relationships. Further, within group comparisons from admission to follow-up revealed that a greater

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[17] Analyses to assess significance of group differences for individual burden items were not performed and could not be computed based on the limited data (means) that were provided in the report.

number of selective burden items improved significantly in the demented, as compared to the depressed group. Liptzin et al. (1988) concluded that since caregivers of demented patients appeared to experience greater reductions in burden, despite the finding that depressed patients responded more favourably to treatment, factors other than improvement were responsible for differences in caregiver response to treatment. To this end they hypothesized that family interventions and professional support provided during the course of hospitalization helped to resolve feelings of guilt and worry, and may have helped families of patients with dementias to better understand the irreversible nature of dementia. However, because the authors did not provide direct tests of this hypothesis, nor did they provide a sufficient description of the program that could assist the reader in determining the priority with which the program engaged in activities known to reduce burden, these conclusions remain speculative.

Thus, although Liptzin et al.'s (1988) findings suggest that caregivers of demented patients experienced more burden on a greater number of items on admission, and despite the fact that improvement on individual items were noted in both caregiving groups, with improvement noted on a greater number of items for demented patients, overall burden scores did not improve over time, nor were significant group differences noted in overall burden scores on either admission or from admission to discharge. However, methodological concerns with Liptzin et al.'s study suggest that additional studies are warranted to further test these relationships.

To begin, lack of significant findings in Liptzin et al's (1988) study may be attributed to imprecise diagnoses. Indeed, Liptzin et al. acknowledged that, due to the exploratory nature of their study, no attempt was made to exclude patients with ambiguous or mixed diagnoses. Given that many geropsychiatric in-patient present with multiple diagnoses, including comorbid depressions and dementias (Harrison et al., 1988; Weingarten et al., 1982), it is possible that some of their patients with a primary diagnosis of depression may also have had a secondary diagnosis of a dementia or that some of their patients with dementia may have had a secondary diagnosis of depression. Under these conditions, significant group differences may have been obscured, highlighting the need to clearly identify whether a patient presents with either a primary or secondary dementia. Related, studies have reported that caregivers of demented patients may experience some unique subjective burdens associated with their relative's illness (Mullen, 1992; Ronch, 1989) but that diagnosis and burden are unrelated based on caregivers of non-demented psychiatric patients (Reinhard et al., 1994). These findings suggest that comparisons between patients who presented with a primary or secondary diagnosis of dementia and non-demented patients in Liptzin et al.'s study may have been more clinically (by including all patients in the analyses) and statistically (by eliminating the potential confound of depressed patients who may have had a secondary diagnosis of dementia or vise versa) meaningful than comparisons between demented and depressed patients (i.e. resulted in significant group differences).

education, and counselling to family caregivers. However, only one study has attempted to empirically assess the impact of the collaborative exchange between professionals and caregivers of elderly psychiatric in-patients (Liptzin et al., 1988). Although this study reported that overall burden scores were similar in caregivers of demented and depressed patients on admission, caregivers of patients with dementia expressed higher levels of stress associated with a greater number of burden items. Further, although depressed patients improved more than demented patients, and despite the fact that no significant differences emerged either between groups or within groups in terms of overall burden scores, caregivers of demented patients experienced significant reductions in a greater number of burden items.

Lack of significant overall findings in Liptzin et al.'s (1988) study were attributed to imprecise diagnoses and to the use of a unidimensional measure of burden. It was therefore suggested that including in the dementia group patients with primary or secondary diagnoses of dementia, contrasting this group with non-demented patients (including but not limited to depressed patients), and incorporating into their methodology the assessment of objective and subjective burden may have provided more clinically and statistically meaningful results. In addition, although the authors suggested that the amount of professional support provided to the caregiver was responsible for changes in caregiver burden, they did not identify how, nor did they assess the extent, to which caregiver needs were addressed by the treatment program. These concerns highlight the need for evaluations to provide more direct tests of the relationships between subjective and objective burden and professional support in caregivers of demented and non-demented geropsychiatric in-patients.

Chapter 7. SUMMARY OF ISSUES AND HYPOTHESES

A review of social, political and economic factors under which psychiatric treatment programs operate suggested that evaluations of geriatric psychiatry in-patient programs, such as the ROH Geriatric Psychiatry In-Patient Unit, are particularly timely. A review of the literature served to confirm this need and to refine the specific evaluation issues that required consideration. In this regard, three primary issues were addressed in this evaluation using the various methodologies as detailed in the next chapter. These issues, along with the specific indicators and methodologies that were used to answer each question, are presented in Table 7. This section will review each of the issues and hypotheses that were tested in this evaluation.

Issues pertaining to patient characterizations

The first issue that was raised in this evaluation pertained to the need to characterize geropsychiatric in-patients who were treated at the ROH and to provide comparisons of demented and non-demented patients as well as comparisons of patients who were treated in 1997 to those of patients who were treated a decade ago. Identifying patient characteristics was deemed important because this knowledge may lead to greater understanding of the burden under which geropsychiatric in-patient units operate (Harrison et al., 1988) and may serve to qualify or facilitate the interpretation of outcome data (Adams & Cohen, 1995). Further, knowledge on how the growing demented population differs from non-demented patients was expected to project the demands to which geropsychiatric in-patient units will need to respond in the future and to better estimate the burdens under which they will increasingly be expected to operate. Finally, contrasting characteristics of current and past patients was considered particularly timely because of the belief that, as a result of changing social demographics and increased pressures toward community based care, geropsychiatric in-patient programs are treating, with relatively briefer admission, patients who are older and more cognitively (i.e. higher prevalence of dementia), psychiatrically, and medically impaired than their predecessors.

A review of the geropsychiatry in-patient literature indicated that these patients were primarily elderly women who were unmarried and admitted directly from their homes. However, given that the most recent epidemiological data were based on patients who were treated almost a decade ago (Zubenko et al., 1997), updated characterizations were deemed necessary. Moreover, comparisons of studies that were published over 10 years ago with more recent studies provided anecdotal evidence that geropsychiatric in-patient units may be treating, with briefer admission, an aging population who are presenting in greater frequency with medical and cognitive impairments (Ancill et al., 1988; Gilchrist et al., 1985; Harrison et al., 1988; Weingarten et al., 1982). However, concerns in making direct comparisons across these studies centred around different sampling criteria and the lack of clarity with regard to what appeared to be differences in geropsychiatric in-patient ward admission criteria. These concerns highlighted the need for additional studies to provide direct comparisons of recent and remote geropsychiatric in-patients. Finally, despite the need to document the differential burden imposed upon geropsychiatric in-patient units by demented and non-demented patients, none of the epidemiological studies that were reviewed provided direct comparisons of these patient populations.

The present evaluation endeavoured to detail the demographic and clinical characteristics of ROH Geriatric Psychiatry In-Patients. In so doing, this evaluation also served to fulfill the need for a contemporary characterization of geropsychiatric in-patients. To this end, consideration of illness severity, functional impairment, suicide and violence potential, and chronicity of the illness was expected to provide important insight that had previously gone unreported with regard to the special needs of geropsychiatric in-patients and the burden under which these units operate.

This evaluation was also designed to provide a direct comparison of ROH Geriatric Psychiatry In-Patients who were treated in 1997 and patients who were admitted, under similar admission criteria, a decade ago. To the extent that fiscal restraints and deinstitutionalisation are instigated by the mental health care system, geropsychiatric units are under similar pressures. Providing a direct comparison of current patients and patients treated a decade ago could be generalized to other similar units and served to provide a direct test of trends that other studies have only alluded to. To this end it was hypothesized that, as a result of social, political, and economic forces, compared to their predecessors, patients treated in 1997 would be older, more medically and psychiatrically impaired, and would present in greater numbers with a dementia.

Finally, comparisons of characteristics of current demented and non-demented patients were undertaken to clarify the burden under which geropsychiatric units currently operate and to offer data upon which future burden may be projected. To this end, it was hypothesized that:

- given that the incidence of organic mental disorders increases with age (Zubenko et al., 1997), demented patients would be older than non-demented patients;
- given the association between age and medical burden (Zubenko et al., 1997), demented patients would be more medically and functionally impaired than non-demented patients; and,
- based on previous findings which suggested that dementia was the most commonly applied secondary diagnosis (Harrison et al., 1988; Weingarten et al., 1982), that patients with dementia would present with greater numbers of psychiatric diagnoses than non-demented patients.

No other demographic or clinical differences were expected based on dementia status.

Issues pertaining to treatment impacts

Outcome issues were also examined in this evaluation and centred around assessing patients on admission, discharge, and follow-up, documenting how demented and non-demented patients differed in their response to the multidisciplinary treatment provided by the ROH Geriatric Psychiatry In-Patient Unit, and identifying variables which predicted treatment outcome and length-of-stay. Assessing treatment impacts was considered essential given pressures for accountability in mental health care. In this regard, documenting differential treatment impacts in demented and non-demented patients was particularly timely given that geropsychiatric in-patient programs are treating a growing population of cognitively impaired patients who are not expected to respond as well to treatment. Identifying variables that predicted outcomes was based on a need, within a cost-conscious environment, to efficiently and adequately provide clinical assessments of psychiatric in-patients in order to facilitate predictions of patients who are most likely to benefit from multidisciplinary geropsychiatric in-patient hospitalization. Finally, the need to identify variables that predicted length-of-stay was based on a shift toward funding hospitals prospectively based on the types of cases they serve, rather than providing an annual global budget.

A review of the literature indicated that although several studies had investigated outcomes of geropsychiatric in-patient treatment (Bakey et al., 1997; Champagne et al., 1996; Kunik et al., 1996; Zubenko et al., 1994; Zubenko et al., 1992), methodological concerns, including the use of non-representative samples, were cited as limiting the generalizability of the findings. Moreover, although some of these studies provided multidimensional measures of treatment outcome, none explored outcome indicators, such as quality of life and satisfaction with treatment that have been identified as important determinants of successful mental health treatment (Graham et al., 1994; World Health Organization, 1991). In addition, although a couple of studies have compared outcomes of demented and non-demented patients (Champagne et al., 1996; Kunik et al., 1996), the use of outcome measures that may not have provided meaningful comparisons across diagnostic groups and that did not assess the multifaceted outcomes of geropsychiatric in-patient treatment highlighted the need for additional studies. Finally, despite that psychiatric in-patients are treated with relatively brief admissions, none of the studies that were reviewed included analyses of residual symptoms nor did they examine longer-term impacts of treatment, suggesting directions for future studies.

Although a couple of studies have attempted to identify variables that might be most important in predicting outcomes of geropsychiatric in-patient treatment, methodological (Lyons et al., 1995a; Zubenko et al., 1994) and recording (Lyons et al., 1995a) inconsistencies were cited as potentially limiting the generalizability and credibility of the findings. Similarly, only one study was identified which examined predictors of geropsychiatric in-patient length-of-stay (Lyons et al., 1995a). This study was able to account for 9% of the variability in length-of-stay. However, the generalizability and utility of the findings that were reported in this study were suspect due to the inclusion of data based on elderly and non-elderly patients and the use of variables and classification schemes that were based on data that were not available on admission. It was also suggested that the predictability of length-of-stay may have been further enhanced by considering whether a patient lived alone on admission and a patient's dementia status.

The present evaluation endeavoured to assess the multidimensional outcomes of treatment on the ROH Geriatric Psychiatry In-Patient Unit and to compare relative effects for patients with dementia versus patients who presented with no dementia. To this end, it was expected that this evaluation would build upon previous findings by assessing psychopathology, specific and general functional limitations, and quality of life using tools that, while sufficiently sensitive to assess syndrome specific symptomatologies, were generic enough to allow for comparisons across diagnostic groupings. In addition, this evaluation was designed to build upon those that were reviewed by incorporating insight into treatment processes and outcomes from the patients' perspective. Finally, this evaluation strived to provide a first examination of symptoms that did not resolve with hospitalization and a first look at longer term impacts of geropsychiatric in-patient treatment. To these ends, it was hypothesized that:

- consistent with general findings in the studies that were reviewed, geropsychiatric in-patients would experience measurable improvements in clinical and functional status. Similarly, it was expected that patients would experience improvements in subjective quality of life and that the majority of patients would be satisfied with their treatment;
- consistent with findings of studies in general psychiatry in-patient units (Draper, 1994) and due to the irreversible nature of the disorders (Zubenko et al., 1992), patients with dementia, despite

having received similar treatment opportunities, would not respond as well to treatment as patients who did not present with dementia. To this end, it was expected that, compared to non-demented patients, patients with dementia:

    - would experience less favourable benefits with regard to their psychopathology. Consistent with this, they were expected to present in greater frequencies with residual symptoms;
    - would experience less favourable outcomes in terms of functional status;
    - would, due to expectations of high prevalence rates of residual symptoms at discharge, and in light of the fact that quality of life is compromised when mental and/or physical health is impaired (Awad, 1995), experience fewer improvements in quality of life;
    - would, due to less favourable outcomes, and in light of the association between poor treatment outcome and lower rates of satisfaction with treatment (Ferris et al., 1992), be less satisfied with treatment;
- as a result of proper treatment and discharge planning, outcomes for all patients would be maintained post-discharge and would not return to pre-treatment levels.

This evaluation was also designed to identify variables that predicted whether a patient who was treated on the ROH-Geriatric Psychiatry In-Patient Unit improved during their admission. In so doing, results could be used to identify the characteristics of patients for whom hospitalization would be most beneficial. By building a prediction model of treatment outcome for age homogeneous elderly (i.e. over the age of 65) geropsychiatric in-patients, using administratively and clinically meaningful outcome categories and using conceptually sound predictors, results of this evaluation were expected to make a significant contribution to a sparse literature. To these ends, it was hypothesized that:

- impaired activities of daily living, impaired social functioning, high medical burden, poor premorbid functioning, greater severity of symptoms, history of substance abuse, and risk of violence and/or suicide would predict lower ratings of global improvement at discharge. It was further expected that consideration of whether a patient presented with dementia would enhance the predictability of outcome;
- the clinical status variables would predict treatment outcome because of their association to the mediating variable participation in treatment. In this regard, the following were expected:
    - a significant relationship between participation in treatment and outcome;
    - a significant predictive relationship between clinical

status variables and participation in treatment;

- after controlling for participation in treatment, clinical variables would no longer significantly predict treatment outcome.

A final purpose of this evaluation, with regard to outcome issues, was to identify variables that predicted ROH Geriatric Psychiatry In-Patient length-of-stay. By considering data of patients who were treated on the geropsychiatric in-patient unit, and by considering whether a patient lived alone and/or presented with dementia, this evaluation aimed to improve upon the predictability of geropsychiatric in-patient length-of-stay, as reported by Lyons et al. (1995a). To this end, it was hypothesized that high medical comorbidiy, suicide risk, violence risk, impaired activities of daily living, impaired premorbid functioning, greater severity of illness, and living alone on admission would be related to longer hospitalization. Conversely, it was expected that the presence of substance abuse comorbidity and the presence of dementia would be predictive of relatively brief admissions.

Issues pertaining to impacts of hospitalization for caregivers

In addition to considering the impacts of hospitalization for patients, this evaluation also examined treatment impacts on caregiver burden. Assessing the impact of hospitalization on caregiver burden was deemed important because the mental health care system is imposing greater demands on caregivers to provide care for their relatives, and because high levels of burden have been associated with physical, financial, and emotional strain (D. Cohen & Eisdorfer, 1988; Schultz et al., 1988) which may result in re-hospitalization of the care recipient (Longino & Mittelmark, 1996; Stephens et al., 1991).

A review of the literature identified only one study which empirically assessed the relationship between hospitalization of a care recipient and changes in burden in caregivers of elderly psychiatric in-patients (Liptzin et al., 1988). Conclusions that were made in this study suggested that, although overall burden scores were not affected by hospitalization, caregivers of patients with dementia experienced slightly more burden on admission and slightly more benefits associated with hospitalization than caregivers of non-demented patients. The authors attributed this difference to the possibility that caregivers of patients with dementia received a greater amount of support from hospital staff than caregivers of non-demented patients. However, this hypothesis was not tested directly. Moreover, methodological issues were cited in reference to Liptzin et al.'s (1989) study which suggested that additional studies were needed to examine changes in both objective and subjective burden in caregivers of demented and non-demented patients who receive geropsychiatric in-patient treatment.

This evaluation aimed to documented how caregivers of patients who were treated on the ROH Geriatric Psychiatry In-Patient Unit responded to their relative's treatment. Specifically, this evaluation was designed to build upon the current state of knowledge concerning the impact of geropsychiatric in-patient treatment from the caregivers' perspective by comparing the amount of professional support received and the changes in overall, objective, and subjective caregiver burden in relatives of patients with dementia and relatives of patients who did not have dementia. To these ends, it was hypothesized that:

- consistent with studies that have reported high levels of subjective burden in caregivers of demented patients (Brody, 1980; Farran et al, 1993; Mullen, 1992), caregivers of demented patients would, on admission, experience greater subjective than objective burden and that ratings of subjective burden would be greater than those of caregivers of non-demented patients. In contrast, because non-demented patients are more likely to reside in the community, caregivers of non-demented patients would experience greater objective than subjective burden and ratings of objective burden would be greater than those of caregivers of non-demented patients;
- all caregivers would experience, from admission to follow-up, reductions in overall, subjective, and objective burden;
- commensurate with needs on admission, caregivers of demented patients would experience greater benefits in terms of subjective burden than caregivers of non-demented patients, who were expected to reap relatively greater benefits in terms of objective burden.

This evaluation also endeavoured to identify the types of support that were most conducive to reducing both objective and subjective burdens for relatives of demented and non-demented patients who required geropsychiatric in-patient treatment. To this end, it was expected that:

- consistent with Liptzin et al.'s (1988) speculations, that caregivers of demented patients would perceive that they had received greater professional support from staff than caregivers of non-demented patients;
- commensurate with needs on admission, caregivers of demented patients would perceive that they had received greater affective support from staff while caregivers of non-demented patients would perceive that they had received more instrumental support;
- after controlling for the presence of dementia and degree of clinical improvement, higher levels of professional support would be positively related to change in caregiver burden.

Although this latter hypothesis predicted relationships based on global conceptualizations of professional support and burden, the relationships between specific kinds of perceived professional support and caregiver's objective and subjective burden were also examined. Specifically, based on Reinhard's (1994) findings, it was expected that caregivers who perceived that they had received instrumental types of support, such as the provision of information regarding behaviour management, would experience reduced objective burden. In contrast, and consistent with Liptzin et al.'s (1988) speculations, it was expected that reductions in subjective burden would be most closely associated with the perceived provision of affective types of support.

Table 7 (continued)

ISSUES	QUESTIONS	INDICATORS	DATA SOURCES
2) Identification of impacts of treatment for patients- con't....	Do demented and non-demented in-patients receive similar treatment opportunities?	- Medication, allied health treatment profiles and length-of-stay of demented and non-demented patients	- Review of clinical records and hospital databases
	Do demented and non-demented patients respond differently to in-patient treatment?	- Clinician rating on CGI-Severity, GAF, PsychSentinel and WHO DAS-S scales on admission and discharge - Patient ratings on Life Satisfaction scale on admission and discharge - Patient ratings on satisfaction survey at discharge - Dementia status	- Assessment of treatment impacts - Review of clinical records and hospital databases
	Are similar numbers of demented and non-demented patients discharged prior to full remission?	- Clinician ratings on the PsychSentinel scale - Dementia status	- Assessment of treatment impacts - Review of clinical records and hospital databases
	Do demented and non-demented patients differ in their ability to maintain their treatment response?	- Clinician ratings on CGI-Severity, GAF, and WHO DAS-S scales on admission, discharge, and follow-up - Dementia status	- Assessment of treatment impacts - Review of clinical records and hospital databases
	What variables predict treatment outcome?	- Clinician rating of CGI-Improvement at discharge - GAF in the past year, GAF on admission, presence of dementia, suicide potential, violence potential, substance abuse comorbidity, impaired activities of daily living, and medical burden on admission - Clinician ratings on of highest GAF in past year, GAF on admission, and PsychSentinel on admission - Nurse ratings of patient participation	- Assessment of treatment impacts - Review of clinical records and hospital databases

Table 7 (continued)

ISSUES	QUESTIONS	INDICATORS	DATA SOURCES
2) Identification of impacts of treatment for patients-con't....	What variables predict length-of-stay?	- Length-of-stay - Living arrangement (living alone or with others), number of medical diagnoses, diagnosis of dementia, suicide potential, violence potential, substance abuse, impaired activities of daily living - Clinician ratings on admission on PsychSentinel and highest GAF in past year	- Review of clinical records and hospital databases - Assessment of treatment impacts
3) Identification of impacts of treatment for caregivers	Do caregivers of demented and non-demented patients experience different forms of burden?	- Caregiver burden ratings on admission - Dementia status	- Caregiver surveys - Review of clinical records and hospital databases
	Do caregivers experience significant reductions in total, objective, and subjective burden from admission to follow-up?	- Caregiver burden ratings on admission and follow-up	- Caregiver surveys
	Is objective and subjective caregiver burden differently reduced in caregivers of patients with versus without dementia?	- Caregiver burden ratings on BAS at admission and follow-up - Dementia status	- Caregiver surveys - Review of clinical records and hospital databases
	Do caregivers of patients with dementia receive greater professional support than caregivers of non-demented patients?	- Caregiver ratings on the Professional Support Scale on discharge - Dementia status	- Caregiver surveys - Review of clinical records and hospital databases
	Do caregivers of patients with dementia receive greater affective professional support while caregivers of non-demented patients receive more instrumental supports?	- Caregiver ratings on the Professional Support Scale on discharge - Dementia status	- Caregiver surveys - Review of clinical records and hospital databases

Table 7 (continued)

ISSUES	QUESTIONS	INDICATORS	DATA SOURCES
3) Identification of impacts of treatment for caregivers	After controlling for the presence of dementia and treatment outcome, to what extent does professional support predict change in burden?	- Caregiver burden ratings on BAS at admission and follow-up - Caregiver ratings of support received on the Professional Support Scale - Dementia status - Clinician rating on CGI-Improvement at discharge	- Caregiver surveys - Review of clinical records and hospital databases - Assessment of treatment impact
	After controlling for the presence of dementia and treatment outcome, what specific types of support are associated with reductions in objective and subjective burden?	- Caregiver burden ratings on BAS at admission and follow-up - Caregiver ratings of support received on the Professional Support Scale - Dementia status - Clinician rating on CGI-Improvement at discharge	- Caregiver surveys - Review of clinical records and hospital databases - Assessment of treatment impact

Chapter 8. EVALUATION METHODOLOGIES

Table 7 (in the previous chapter) presented a matrix outlining the specific indicators and methods that were used to address each of the specific evaluation issues and questions. Briefly, this evaluation made use of four methodologies: review of clinical records and hospital databases, review of archival data, assessments of treatment impact, and caregiver surveys.

Review of clinical records and hospital databases

Sample

Data from the charts of 212 consecutive admissions who were discharged from the ROH Geriatric Psychiatry In-Patient Unit between January 1, 1997 and December 31, 1997 were reviewed. Consent for data used in this portion of the evaluation was not obtained. According to the Mental Health Act, data from clinical records may be examined and/or data therein may be transmitted from the "officer in charge" to "a person for the purpose of research, academic pursuits or the compilation of statistical data" (chapter 262, section 29(3). In other words, data that are routinely collected as part of the clinical record do not require consent.

Materials and procedure

Demographic and clinical history

Reviews of hospital records served to obtain demographic data including age, gender, marital status, and pre-admission residence status (alone/not alone) and type (i.e. home, long-term care facility). Clinical risk data, including risk of suicide, history of substance abuse, and risk of violence against others, were tracked based on documentation of either past known incidences or current behaviours, as identified in assessment, progress, and/or discharge summary reports. Finally, some additional clinical data, including history of psychiatric hospitalizations, were determined through reviews of assessment reports and through hospital databases.

Psychiatric diagnoses

Diagnoses were based on DSM-IV (APA, 1994) and ICD-9-CM (International Classification of Diseases, 1993) diagnostic classification systems. Primary and secondary diagnoses were noted from clinical records and then grouped into four broad categories based on the DSM-IV classification systems: mood disorders, organic mental disorders, psychotic disorders, and other disorders. Also noted was whether the patient had a primary or secondary diagnosis of dementia.

Medical comorbidity

The number of medical diagnoses per patient, obtained from hospital files and discharge summaries, served as a measure of medical burden. Following the requirements of the Canadian Institute for Health Information (CIHI), and consistent with the strategy used by Zubenko et al. (1997), medical diagnoses were coded in charts based on the physician rated ICD-9-CM classification system (International Classification of Diseases, 1993). The validity of using number of diagnoses as an index of medical burden was confirmed in a study of elderly psychiatric patients which reported that the number of medical problems correlated significantly with scores on the Cumulative Illness Rating Scale (geriatric version) (Mulsant et al., 1994). The specific nature of the medical problems was also examined in the present evaluation.

Functional limitations

Two measures were readily available in clinical records to assess functional limitations, the Global Assessment of Functioning scale (GAF; American Psychiatric Association, 1994) and the ROH Activities of Daily Living scale (ROH-ADL scale) (copies of which are included in the clinician rated measures in Appendix C).

Global Assessment of Functioning. The Global Assessment of Functioning (GAF; APA, 1994) is a revision of the Global Assessment Scale (Endicott et al., 1976) for measuring the overall impact of psychiatric disturbances in terms of psychosocial and occupational functioning, The GAF has been used to assess functioning in elderly psychiatric in-patients (Kunik et al., 1996) and was routinely collected on all ROH in-patients.

Psychiatrist rated the GAF considering psychological, social, and occupational functioning on a hypothetical continuum of mental health-illness. A score ranging from 1 (persistent danger of severely hurting self or others) to 100 (superior functioning in a wide range of activities) was based on the rater's impressions during the context of a clinical interview, documentation, and/or interviews with other significant informants. To this end, GAF scores are typically applied based on highest level of functioning in the year prior to admission, functioning on admission, and functioning at discharge.

The GAF has been well accepted as clinically useful by clinicians and has demonstrated acceptable inter-rater reliability (Jones, Thornicroft, Coffey, & Dunn, 1995). For the purposes of the present evaluation, reliability of the admission GAF ratings based on an elderly ROH sample were assessed via concordance of ratings of a videotaped psychiatric interview by 21 psychiatrists. Ratings for all but one of the clinicians (95%) fell between 30 and 50, within the realm of severe impairment (Rabinowitz, Modai, & Inbar-Saban, 1994). Validity studies have reported that the GAF was a good predictor of diagnostic groupings (e.g. Mezzich, Fabrega, & Coffman, 1987; Skodol, Likn, Shrout, & Horwath, 1988; Trzepacz, Brenner, & Van Thiel, 1989) and that it correlated well with other measures of adaptive functioning (e.g. Patterson & Lee, 1995; Rey, Stewart, Plapp, Bashir, & Richards, 1988; Skodol et al., 1988; Westermeyer & Neider, 1988). Moreover, studies which have used the GAF to measure change associated with treatment have concluded that it was sensitive to treatment effects (e.g. Caldecott-Hazart & Hall, 1995; Dufton & Siddique, 1992). However, because the GAF also correlates well with general measures of illness severity (Roy-Byrne et al., 1995), it has been recommended that additional measures of functioning be used to assess specific functional areas (Roy-Byrne et al., 1995).

ROH-Activities of Daily Living scales. Specific limitations in activities of daily living were identified based on nurse ratings on a standard activity of daily living scale that was completed by primary nurses as part of routine admission documentation. The tool was similar to several standardized measures of activities of daily living, including the Physical Self-Maintenance Scale (Lawton & Brody, 1969), in that patients' level of independence to care for self were assessed along a number of dimensions, i.e. eating/drinking, bathing, dressing/grooming, toileting, bed mobility, transferring, and ambulation.

Ratings on the ROH-Activities of Daily Living (ROH-ADL) scales are based on observations and were made on a 6 point scale ranging from 0 (totally independent) to 5 (requires total assistance of 2 staff). Scores from each of the subscales were summed to provide a total score ranging from 0 (totally independent) to 35 (totally dependent). For the purposes of this evaluation, where the goal was to determine the number of patients who required assistance with ADLs, patients were rated as impaired in their ADLs if nurse ratings indicated less than total independence in any of these functional tasks.

Interrater reliability estimates of the ROH-ADL ratings were assessed for the present evaluation and based on concordance of ratings of 26 patients made by primary nurses and associate primary nurses. The average Pearson correlation coefficient of ADL ratings was .84 (range .78 - .97). Validity of the ROH-ADL scale was established by correlating ratings on this measure with physician ratings based on the WHO DAS-S ADL subscale (reviewed below). Results indicated significant and good concordance ($\underline{r}$ = .75).

Treatment opportunity data

Allied health treatment profiles. Workload measurement, which was completed by all allied health staff (i.e. social workers, recreation therapists, occupational therapists, physiotherapists, clinical dieticians, psychologists/psychometrists), provided a profile of allied health interventions. Staff, in completing workload measurement data, recorded the date, duration, and purpose (assessment, intervention) of patient contacts. Because the goal was to identify the number of patients who were provided with specific allied health treatment opportunities, workload measurement data were coded dichotomously as yes/no. That is, if the patient was seen by a specific allied health professional a coding of 1 (yes) for that specific professional was entered, while if no intervention was indicated a 0 (no) was recorded. Validity of workload measurement data were assessed by comparing allied health staff records of patient interventions (coded as yes/no) with identification of interventions based on data recorded in the workload measurement system. Estimates of concordance, based on Kappa coefficients, were .96 or greater for all allied health disciplines.

Length-of-stay. Length-of-stay was abstracted from clinical records and was calculated in days (minimum 1 day) and only included the time spent on the Unit. That is, length-of-stay for patients who were discharged to a medical hospital for treatment and readmitted was calculated by considering only the days spent on the Unit. This was designed to ensure that length-of-stay reflected only the actual days spent on the ROH Geriatric Psychiatry In-Patient Unit.

Review of archival records

Data were reviewed for all (n=55) patients who were treated on the In-Patient Unit in 1987. As with the previous methodology, consent was not required for use of archival data.

Demographic data that was available from archival records included age, gender, marital status, and pre-admission residence. Clinical data that was available in archival records included primary and secondary psychiatric diagnoses, medical profiles, and severity of illness ratings. Psychiatric diagnoses were categorized according to the earlier version of DSM-IV, the DSM-III-R (APA, 1987). As was done for patients treated in 1997, diagnoses that were applied to patients in 1987 were categorized into four broad categories based on the DSM-IV classification systems: mood disorders, organic mental disorders, psychotic disorders, and other disorders. Medical burden was assessed via enumeration of the number of medical problems, as was done in relation to patients who were treated in 1997. Although medical diagnoses were not categorized according to a particular system, categorization according to the ICD-9-CM was feasible due to the meticulous documentation by program staff in 1987. The specific nature of the medical problems was also examined. Finally, severity of illness on admission was assessed for all patients who were treated in 1987 using the CGI-Severity scale (described below).

Assessments of treatment impacts

Sample

Outcome data were collected for 100 consecutive patients[18] who were

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[18] This sample size was deemed appropriate based on calculation of power. To this end, because the patients that were included in Zubenko et al.'s (Zubenko et al., 1992; Zubenko et al., 1994) studies were deemed most representative of geropsychiatric in-patients, effect sizes that were considered were based on results of these studies. The smallest effect size that was deemed clinically meaningful

admitted to and discharged from the ROH Geriatric Psychiatry In-Patient Unit over a 6 month period, between July and December, 1997. However, only data from patients who consented to participating in the assessment of treatment impacts (n=37 demented and 56 non-demented patients) were included herein (differences between patients who provided consent and those who refused are discussed in the next chapter). Included, then, were consenting elderly people (aged 65 and over) with severe psychiatric illness who posed a threat to themselves or others and/or required intensive evaluation and/or treatment which could not be provided in outpatient or day hospital settings.

Materials

Copies of consent forms are included in Appendix B, while copies of each of the measures are found in Appendix C.

Measures of clinical status

The clinical status measures selected for this study were all clinician-rated for several reasons. First, the validity of self-report scales completed by severely ill patients has not yet been clearly established (Eiser, Grob, & Dill, 1991; NIMH, 1992). Second, studies have shown poor concordance between clinical assessments and self-ratings, even among outpatients (Cass, Charles, & Klein,

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in estimating change from admission to discharge was calculated to be $r^2 = .38$ (Zubenko et al., 1992). According to Pedhazur & Pedhazur-Schmelkin (1991), this is equivalent to a medium effect based on J. Cohen's (1988) guidelines (gamma = .50). Thus, a sample size of 100 in the present evaluation was expected to produce excellent power to detect admission to discharge differences in outcomes (power = .99). Using this same sample size and an anticipated moderate effect size to detect group differences, based on Draper's (1994) findings and using J. Cohen's (1988) definition of a moderate gamma as .50, power to detect differences between demented and non-demented (assuming relatively equal sample sizes) was expected to be as high as .94.

1983; Nerenz, Repasky, Whitehouse, & Kahkoren, 1992). Third, certain important aspects of mental status, such as insight and psychosis, cannot be validly established with patient self-ratings (Roy-Byrne et al., 1995). Two measures were used to assess the impact of treatment on clinical status. Overall illness severity was assessed using the generic Clinical Global Impression scales, while the PsychSentinel was used to assess disease specific symptom severity.

Clinical Global Impression scales. The Clinical Global Impression (CGI; Guy, 1976; NIMH, 1976) scales were developed by the National Institute of Mental Health to provide a brief measure of overall mental illness severity and treatment outcome. The CGI scales consisted of two measures: Severity of illness and Improvement. The CGI scales have been widely used in clinical trials, including trials using the elderly (Kanowski, Kindler, Lehman, Schweizer, & Kuntz, 1995; Kosckow, McElroy, Cameron, Mahler, & Fudala, 1997) and have been periodically collected by the ROH Geriatric Psychiatry program staff to assess patient characteristics on admission and treatment outcome.

Psychiatrists completed the CGI based on clinical judgement. Severity of illness was scored along a 7-point scale ranging from 1 (normal, not at all ill) to 7 (among the most severely ill). Improvement was also assessed on a 7-point scale which ranged from 1 (very much improved) to 7 (very much worse).

The interrater reliability of the CGI-Severity (.87) and the CGI-Improvement (.93) scales have been established (Vetter & Koller, 1996). Interrater reliability for the CGI-Severity scale in the present evaluation was assessed by examining agreement in ratings between 21 psychiatrists reviewing a videotape interview with an ROH elderly patient. Ratings for all but one of the clinicians (95%) indicated that the patient was at least markedly ill. Evidence of concurrent validity was presented by Vetter and Koller (1996) who reported significant relationships between CGI scores and other measures of pathology, i.e. number and duration of further hospitalizations and scores on the Global Assessment Scale (Endicott et al., 1976).

PsychSentinel. The PsychSentinel (Mark, 1992, 1994), which was developed based on the standardized diagnostic criteria in the DSM-IV, was used to assess severity of symptoms. The PsychSentinel was selected from among the potential pool of measures[19] because it was judged by a group of three clinical psychiatrists, to have the greatest face validity and to be the most clinically useful. Moreover, the PsychSentinel has been used as an outcome monitoring tool in over 30 sites in the US with a wide array of psychiatric patients, including the elderly (Mark, personal communication, June 3, 1997).

In completing the PsychSentinel, raters reviewed each of 19 potential diagnostic checklists and identified those symptoms that the patient exhibited on admission and at discharge. On admission, each symptom on the checklist within the appropriate diagnostic grouping was categorized as either "present" or "absent". At discharge, ratings were made according to whether the symptom was "still a

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[19] Included as possible outcome tools that were reviewed were the Sandoz Clinical Assessment - Geriatric (Shader, Harmatz, & Salzman, 1974), the Brief Psychiatric Rating Scale (Overall & Gorham, 1962), and the Psychiatric Symptom Assessment Scale (Bigelow & Berthot, 1989).

problem", "improved", or "not a problem". The symptoms have been weighted to reflect clinical significance (for example, hallucinations are given more weight than insomnia)[20].

The PsychSentinel has undergone psychometric testing and has been found to be well accepted by mental health staff (Davis & Fong, 1996). Interrater reliability, based on 30 adult in-patient cases, was found to be good (.87 - .89) (Davis & Fong, 1996). Interrater reliability in this evaluation, using concordance ratings of 21 psychiatrists reviewing a videotape interview with an ROH elderly patient was also good - there was 95% agreement for primary diagnosis, while agreement for the presence of individual symptoms, with the exception of 2 symptoms on which there was 52.6% and 55% agreement, ranged from 73.7% to 100% (mean agreement of 83.4%). Moreover, construct validity of the PsychSentinel was confirmed via significant correlations with other established measures, including the Global Assessment of Functioning scale, the Mini Mental State Examination, and the Psychiatric Symptom Assessment Scale (Roy-Byrne et al., 1995). Finally, Roy-Byrne et al. (1995) reported that the PsychSentinel was sensitive to change and was able to distinguish among a variety of levels of treatment response.

Interrelationships between clinical status measures. The relationship between the PsychSentinel total score and the CGI-Severity score on admission

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[20] The weighting factors were determined by clinical judgements of psychiatrists who were all active in the development of DSM-IV (Davis & Fong, 1996).

was moderate but significant ($r = .26$, $p < .001$). Similarly, the relationship between PsychSentinel and CGI-Severity change scores confirmed a significant moderate relationship ($r = .43$ $p < .001$). Finally, the correlation between CGI-Improvement scale and the CGI-Severity change scores ($r = -.67$ $p < .001$) was greater than that between the CGI-Improvement scale and PsychSentinel change scores ($r = -.36$, $p < .001$). These relationships suggest that the measures of clinical status, while related, tap into slightly different constructs.

Measures of functional status

The functional status measures that were included in the assessment of treatment impacts, like the clinical status measures, were observer rated because of the uncertainty of the validity of self-report scales when completed by severely mentally ill patients (Eiser et al., 1991; NIMH, 1992). To this end, two tools were used: the GAF (reviewed earlier and typically available from clinical records) and the World Health Organization Short Disability Assessment Schedule (WHO DAS-S; Janca et al., 1996).

World Health Organization Disability Assessment Scale - Short form. The World Health Organization Disability Assessment Scale - Short form (WHO DAS-S; Janca et al., 1996), an abbreviated version of its predecessor, the WHO Psychiatric Disability Assessment Schedule (WHO DAS; World Health Organization, 1988), was developed to assess the functional consequences of mental disorders. Two subscales, the activities of daily living (ADLs) and social functioning subscales, were used in this evaluation.

Clinicians were instructed to make ratings on a 6-point scale for each of the areas of the functional realms. The anchor points of the scale were 0 (no disability) and 5 (gross disability). In assessing the disability, the clinicians were asked to consider both the severity of the dysfunction (i.e. the number of expected tasks and roles that have been affected), as well as its duration (i.e. the proportion of time in the past during which the dysfunction was manifest). Because interest in the individual function areas were of primary interest, the two subscale scores on the WHO DAS-S were kept distinct (not summed).

Results of a recent study reported good face validity for the WHO DAS-S (Janca et al., 1996). This same study reported acceptable levels of inter-rater reliability estimates. Interrater agreement in the present evaluation using concordance ratings of 21 psychiatrists reviewing a videotape interview with an ROH elderly patient were acceptable for both the WHO DAS-S social functioning and the ADL subscales. For both measures there was 100% agreement regarding the presence of disability. Moreover, 87.6% of clinicians concurred that this patient was disabled in most or all of her expected activities of daily living, while 80% agreed that she was disabled in most or all of her social roles. While the validity has not yet been established for the WHO DAS-S, the longer version, the WHO DAS, has been tested and found to correlate well with other measures of functioning (Jablensky, Schwartz, & Tomob, 1980) and was deemed a sensitive measure of treatment outcome (Marneros, Deister, & Rohde, 1992).

Interrelationships between functional status measures. The relationship between the WHO DAS-S social adjustment and the WHO DAS-ADL subscale on admission was significant ($r = .68$, $p < .001$). Similarly, results indicated that WHO DAS-S ADL and social functioning subscales correlated well with the GAF on admission (r's = -.59 and -.66, respectively, p's < .001), Relationships between change scores revealed similar patterns, with the WHO DAS-S social adjustment and the ADL subscales showing a moderate yet significant relationship to each other ($r = .47$ $p < .001$) and to the GAF (r's = -.51 and -.46, respectively, p's < .001). These findings provide some evidence for the validity of the WHO DAS-S and suggest that the measures, while related, were not redundant.

Measure of quality of life

The subjective quality of life measure that was used in this evaluation was based on Lehman's (Lehman, Ward, & Linn, 1982) delighted-terrible Global Life Satisfaction Scale (a subscale of Lehman's Quality of Life Interview). This seven-point scale format has been extensively used by Lehman and his colleagues (e.g. Lehman, Postrado, & Rachuba, 1993; Lehman et al., 1982) and others (e.g. Corrigan & Buican, 1995; Russo et al., 1997) to assess general life satisfaction. In addition, Russo et al. (1997) used this scale to assess quality of life in an acute psychiatric in-patient sample that included elderly patients. The appeal of single-item quality of life scales, such as this, is that they are simple to apply and may be used with people who may have difficulty completing a questionnaire (McDowell & Newell, 1996).

Patients completing the Global Life Satisfaction Scale were asked the health services (Favaro, 1995). The CSQ has been translated into French (Perreault, Leichner, & Sabourin, 1993) and French versions of the satisfaction questionnaires were available for Francophone patients.

Following the recommendations of Favaro (1995), satisfaction with program specific facets were also assessed. To this end, and based on the dimensions of satisfaction that have been identified as most relevant to psychiatric patients (Lyons, Howard, O'Mahoney, & Lish, 1997), 14 items were added to the CSQ that reflected various components of the treatment experience. Preliminary piloting of these 14 items and the CSQ-8 indicated that two questions on the CSQ were redundant and not well understood by patients. These were therefore eliminated from the survey. Similarly, 5 custom items were either not well understood or deemed not relevant by patients, and were therefore removed from the survey. The final satisfaction survey, then, consisted of 15 items: 6 of the CSQ-8 items and 9 custom items[21].

Consistent with the original CSQ, the satisfaction survey used in this study was administered in a self-report format. Since the CSQ has also been administered in interview contexts, where literacy or visual impairment was an issue, the satisfaction survey was administered in an interview format. Four option-labelled response formats were used, as in the original CSQ, to rate each item, with "1" indicating extreme dissatisfaction and "4" indicating high satisfaction. While the

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[21] Missing data were estimated by taking the mean response provided by the respondent.

ordering of the CSQ response options has typically been balanced across items to reduce the possibility of acquiescent responses, the response items were consistently ordered in the present satisfaction survey to facilitate patient comprehension of the survey. The additional custom items added to the satisfaction survey were rated according to a similar 4-point scale, ranging from 1 (strongly disagree) to 4 (strongly agree). Scoring was accomplished by summing ratings assigned to all of the 15 items. Total scores for the satisfaction scale thus ranged from 15 to 60. In order to provide data that could be used for quality improvement, individual custom item scores were also considered.

The CSQ-8 has been found to have good reliability, with estimates of internal consistency across studies ranging from .78 to .93 (Ferris, Williams, Llewellyn-Thomas, Babinski, Cohen, & Naylr, 1992; Gorey, Chandler, & Osman, 1996). The validity of the CSQ-8 has also been well established by comparing scores with other variables that were predicted to be related to client satisfaction (Larsen, 1979; Nguyen, Attkisson, & Stegner, 1983; Zwick, 1982). Analyses designed to assess the psychometric merit of adding the 9 customized items to the 6 item CSQ in the present evaluation indicated that the combined scales were internally consistent (Cronbach's alpha=.95). Moreover, the 9 custom items were significantly correlated with the 6 CSQ items ($\underline{r}$ = .57, $\underline{p}$ < .001), providing some evidence of the construct validity (Vermillion and Pfeiffer, 1993).

Additional measures

Upon discharge, primary nurses rated, along a 5 point scale, ranging from

1 (very active) to 4 (refused treatment) patients' level of participation in treatment. A rating of 5 (unable to participate) was assigned if the patient was unable to participate due to medical or other (e.g. language barrier) reasons. The primary nurse also identified the most appropriate reason for discharge (e.g. completed treatment, drop-out, transfer, etc.). Kappa correlation coefficients for 26 paired (primary nurse and associated primary nurses) ratings of participation in treatment and reason for discharge were high (r's = .91 and .98, respectively, $p < .001$), indicating good interrater reliability for these measures.

Design and procedure

The assessment of treatment impact study used a two group (dementia/non-dementia) pretest-posttest design, comparing patient data on admission to, and discharge from, the ROH Geriatric Psychiatry In-Patient Unit, as well as approximately 4 weeks following discharge. While other designs were potentially more powerful[22], ethical (i.e. inability to withhold treatment), practical (i.e. the admission wait list for the Unit was typically shorter than 1 week), and methodological (i.e. inability to find a comparable group among outpatient or day hospital patients[23]) considerations prevented the use of more rigorous experimental strategies.

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[22] Some of the potential sources of internal invalidity of this design included history, maturation, instrumentation, and regression toward the mean.

[23] Outcome data from day hospital patients (i.e. CGI scales, GAF) were reviewed and compared to in-patient data but deemed inappropriate given the gross discrepancy between groups in severity of psychopathology and functioning on admission.

Consent from patients was obtained in the following manner. For patients who were able to give informed consent, consent was obtained immediately on admission. For patients who were not able to give informed consent on admission but were able to do so before discharge, consent was obtained at some time during admission, prior to discharge. Patients who were discharged before consent could be obtained were contacted to obtain consent by telephone. For patients who were unlikely to be able to give informed consent (those who had listed in their charts a substitute decision maker), consent was sought from their substitute decision makers. For patients who refused or were unable to participate, reasons for the refusal were documented and basic demographic and clinical data were collected from clinical records to assess possible self-selection bias.

Within the first week of admission, the patient's primary nurse administered the Global Life Satisfaction Scale, while psychiatrists completed the PsychSentinel, CGI-Severity scale, the GAF. and the WHO DAS-S. Upon discharge, nurses re-administered the Global Life Satisfaction Scale and rated the patient's reason for discharge and participation in treatment. Psychiatrists repeated the PsychSentinel, CGI-Severity scale, GAF, and the WHO DAS-S subscales. They also completed the CGI-Improvement scale. In addition, patients were approached by ROH volunteers in the last couple of days prior to discharge and asked to complete the satisfaction survey. Volunteers provided respondents with a cover letter explaining the purpose of the satisfaction survey and assuring them that their responses would be kept confidential and would in no way adversely affect their care, now or in the future. Patients were given the option of providing their name on the survey or leaving it anonymous[24]. For those patients who were unable to read the survey due to physical limitations, items were read and responses noted by the volunteer. Finally, when patients presented for follow-up appointments, psychiatrists completed the CGI-Severity scale, the GAF, and WHO DAS-S subscales. Psychiatrists, at this time, also administered the Life Satisfaction Scale.

Caregiver surveys

Sample

Contact was established with family caregivers of the 100 consecutive patients on whom outcome data were collected. Family caregivers were identifiable for 91 of these patients. Of these, successful contact was made with 89 caregivers (attempts at contact were made a minimum of four times).

Materials

Samples of consent forms are included in Appendix D, while samples of each of the measures are found in Appendix E. All caregiver rated scales were translated, using a professional translation service, into French for Francophone respondents. The validity of the professional translation process was determined by asking 5 bilingual ROH staff to translate the French version to English. Adjustments were made to the translated scales, as required, based on this

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[24] A recent study concluded that satisfaction ratings obtained under confidential conditions are as reliable and valid as ratings obtained under fully anonymous conditions (Leonhard, Gastfriend, Tuffy, Neill, & Plough, 1997).

process.

Measure of caregiver burden

The Burden Assessment Scale (BAS; Reinhard, et al., 1994) was designed to assess both objective and subjective burden in caregivers of severely mentally ill patients. It was selected from among the many measures of caregiver burden available, in particular the Burden Interview (Zarit et al., 1980) because it was deemed brief and easy to administer, has been identified as appropriate for heterogeneous patient populations, and it has been used clinically and for research purposes (Schene, Teslet, & Gamache, 1994).

The 10 objective and 9 subjective BAS items were administered in the context of a telephone interview. Respondents were asked to rate, on a 4-point scale (1=not at all, 4= a lot), the extent to which they had the experiences listed during a two week time frame. Scoring was accomplished by summing the responses, with higher scores indicating greater levels of caregiver burden[25]. Individual objective and subjective scores as well as total score were considered in the present evaluation.

The internal reliability of the BAS has been found to be high in two separate studies (.89 and .91, respectively) (Reinhard et al., 1994). Similar estimates of internal reliability were found in the present study (Guttman split-half = .82). Construct validity was confirmed by assessing the stability of the BAS factor

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[25] Missing data on all caregiver measures were estimated by taking the mean response provided by the respondent.

structure in separate analyses for these two studies (Reinhard et al., 1994). The BAS has also been found to differentiate between caregiver samples known to have different levels of burden and has been found to be sensitive to changes over time (Reinhard et al., 1994).

Measure of professional support

The Professional Support Scale (Reinhard, 1994) was developed based on issues that were identified in the literature as being particularly relevant to families of patients with mental illness. Included in this Professional Support Scale were seven instrumental support items (e.g. information about the illness, medications, available resources, and practical advice on dealing with problem behaviours) and four affective support items (e.g. encouragement to recognize the efficacy of caregiving, respect for the caregiver's role in the treatment plan).

The Professional Support Scale was administered in the context of a telephone interview. Respondents were asked to rate the amount of help that they received from program staff while their patient relative was hospitalized. Items were rated along a 4-point continuum from 1 (not at all) to 4 (a great extent). Scoring was accomplished by summing individual responses, with total scores ranging from 11 to 44. Scores for individual affective and instrumental subscales were also considered.

Data on the psychometric qualities of the Professional Support Scale were published by Reinhard (1994). The coefficient alpha for the items on the scale was .74, indicating good internal reliability. In the present evaluation, internal consistency was slightly better (Guttman's split half = .85). Reinhard (1994) also established content validity via focus groups with a family advisory group and psychiatric nurses. Finally, construct validity was evidenced by Reinhard (1994) by a correlation of .60 with a separate item measuring respondents' satisfaction with the "amount of information, practical advice, an emotional support mental health professions have given".

Procedure

Consent from family members for their participation was obtained by telephone when their patient relative was admitted to the Unit. Family members who declined to participate were not re-contacted upon discharge or follow-up.

Within 72 hours of admission, primary caregivers were contacted by telephone by the investigator and, if consent was obtained, asked to complete the BAS. At that time they were told that they would be contacted upon their relative's discharge, and again one month post-discharge. Upon discharge, families were contacted and asked to complete the Professional Support Scale. Finally, one month post-discharge, families were contacted to complete the follow-up version of the BAS.

Chapter 9. ANALYSES AND RESULTS

Patient Characterizations

Characterization of current patients

Basic descriptive statistics serve to summarize demographic and clinical characteristics of patients who were treated in 1997. A total of 186 patients accounted for 206[26] Geriatric Psychiatry In-Patient admissions in 1997. The mean length-of-stay for these 206 admissions was 44.18 days (SD = 4.36).

Demographic profiles. Patients who were treated in 1997 ranged in age from 65 to 96, with a mean age of 76.1 years (SD = 6.69) years. The majority of these patients were female (N = 139, 67.5%) and most were either married (N = 83, 40.5%) or widowed (N = 81, 39.5%). Only 22.0% (N = 44) of patients lived alone; the majority were admitted from their own or a relative's home (N = 147, 78.1%), while 21.7% (N = 44) were admitted from long-term care facilities. Upon discharge, the majority (N = 171, 83.0%) of patients returned to the residence from which they were admitted. Of the 35 whose residence changed upon discharge, 21 (60.0%) were discharged to a general hospital for medical attention, while the remaining 14 were either discharged to a long-term care facility or intermediate stay/rehabilitation psychiatric hospital (i.e. Brockville Psychiatric Hospital).

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[26] Although hospital records document 212 admissions in 1997, six patients were admitted to the Unit, discharged to a medical hospital for treatment, and readmitted within 14 days to the Geriatric Psychiatry In-Patient Unit. As a result, for the purposes of this report, only 1 admission was noted for these patients and length-of-stay data was based on the number of days actually spent on the Unit during each admission.

Clinical and medical profiles. The clinical history of these patients indicated that 25.0% (N = 52) had been admitted to this or another psychiatric hospital in the year prior to the current admission, while for 47.6% of patients (N = 98), this was a first admission. The remaining 27.2% of patients had been hospitalized for psychiatric problems in excess of one year prior to the current admission. Of the 108 patients who had been previously hospitalized for psychiatric problems, the majority (N = 88, 81.5%) had a history of multiple (i.e. two or more) known psychiatric admissions. Other clinical data suggested that 31.0% (N = 65) of patients had a history of either suicidal ideations or suicide attempts (including that which precipitated the current admission), while 25.0% (N = 52) had a history of, or currently exhibited, aggressive behaviours. Finally, only a small minority of patients (N = 36, 17.5%) had a history or currently presented with comorbid substance abuse problems.

Most patients, on admission, were deemed in urgent, but not life threatening, need of treatment (N = 130, 63.1%), while slightly over a quarter of patients (N = 55, 26.7%) were deemed in life threatening need of treatment. Admissions were deemed elective for only a minority (N = 21, 10.2%) of patients. The most common reason for admitting a patient to the In-Patient Unit was because they required intensive treatment and/or evaluation that could not be safely provided in less rigorous settings (N = 85, 41.2%), while a similar proportion were admitted because they were deemed to pose a threat to either themselves and/or others (N = 81, 39.3%). Inability of the caregiver to properly manage the patient at home (i.e.

caregiver failure) was cited as the primary reason for admission in 13.6% (N = 28), of admissions. Finally, a minority (N = 11, 5.3%) of patients were admitted for other reasons, most notably because they lived too far to commute to the hospital on a regular basis.

As can be seen in Table 8, the most common primary psychiatric syndromes, based on DSM-IV categorizations were mood disorders, which accounted for 56.3% of all primary diagnoses, the most common of which were depressive disorders which accounted for 85.3% of all mood disorders. The next most commonly applied primary diagnoses were delirium, dementia, amnesia, and other organic mental disorders (26.7%), the most common of which was dementia, accounting for 89.1% of all organic syndromes. Schizophrenia and other psychotic disorders, were relatively uncommon, accounting for 12.1% of all diagnoses, while other diagnoses, including adjustment disorders and substance abuse disorders comprised the remaining 4.9% of diagnoses.

Almost half (N = 104, 49.5%) of patients who were treated in 1997 received multiple psychiatric diagnoses. As is shown in Table 8, the most commonly applied secondary psychiatric illnesses were dementia, accounting for 30.7% of all secondary diagnoses, and depressive disorders, which accounted for 19.8% of all secondary diagnoses. Substance abuse and personality disorders accounted for a little over 10% of secondary diagnoses (11.9% and 10.9%, respectively), while psychotic disorders, anxiety disorders, adjustment disorders, manic disorders, nonpsychotic disorders due to organic brain damage, conduct disorders, and

Table 8

Prevalence of Primary and Secondary Psychiatric Diagnoses

	Primary Diagnosis		Secondary Diagnosis	
Diagnosis	n	%	n	%
Mood disorder	116	56.3	23	11.2
depression	99	48.1	19	9.2
bipolar-manic	10	4.9	2	1
bipolar-mixed	7	3.4	2	1
Organic mental disorder	55	26.7	36	17.5
dementia	49	23.8	31	15
delirium	5	2.4	1	5
other	1	0.5	4	1.9
Psychotic disorders	25	12.1	3	1.5
schizophrenia	14	6.8	2	1
paranoid disorder	2	1	0	0
other	9	4.4	2	1
Other disorders	10	4.9	37	18
adjustment disorders	6	2.9	4	1.9
substance abuse	2	1	12	5.8
anxiety disorders	1	0.5	6	2.9
personality disorders	0	0	11	5.3
neurotic depression	1	0.5	1	0.5
conduct disorders	0	0	1	0.5
mental retardation	0	0	1	0.5
nonpsychotic disorders due to organic brain damage	0	0	1	0.5

mental retardation each accounted for 5.9% or less of all secondary diagnoses.

Medical comorbidity was noted in 95.6% of patients. Moreover, over 50% of patients received treatment for multiple (2 or more) medical conditions, the mean number of medical problems being 3.7, SD = 2.26 (range 0-10). Table 9 presents the most prevalent medical problems that patients who were treated in 1997 presented with, categorized according to the ICD-9-CM (1993) classification scheme. As can be seen therein, vascular problems were diagnosed in 54.5% of patients. Problems with the nervous system and sense organs were identified in 41.7% of patients. Over a third of patients presented with endocrine, nutritional, and/or metabolic problems (36.4%), while almost a third presented with musculoskeletal system problems (29.6%) and digestive disorders (27.2%). Finally, fewer than 20% of patients presented with respiratory, genito-urinary, and infectious diseases, while less than 10% of patients were diagnosed with injuries and poisoning, neoplasms, signs and symptoms of ill-defined conditions, diseases of the blood and blood-forming organs, or skin and subcutaneous tissue diseases.

Finally, and as would be expected based on the presence of multiple psychiatric and medical illnesses, most patients (72.0%) were classified, based on the CGI-Severity[27] scale, as severely ill on admission and the majority (also 72.0%) were judged by nurses to be impaired in their abilities to perform basic activities of

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[27] Because CGI-Severity scores were not routinely collected on patients treated in 1997, CGI-Severity data collected for patients treated in 1997 were based only on those patients who provided consent to take part in the treatment impact study.

Table 9

Comparisons of Prevalence of Most Common Medical Problems in Patients Treated in 1987 Versus 1997

	Year	
	1987 n (%)	1997 n (%)
Diseases of the vascular system	26 (47.3%)	112 (54.4%)
Diseases of the nervous system and sense organs	30 (54.5%)	86 (41.7%)
Endocrine, nutritional, and metabolic diseases	19 (34.5%)	75 (36.4%)
Diseases of the musculoskeletal system	16 (29.1%)	61 (29.6%)
Diseases of the digestive system	18 (32.7%)	56 (27.2%)
Diseases of the respiratory system	5 (9.1%)	29 (14.1%)
Infectious and parasitic diseases	5 (9.1%)	27 (13.1%)
Diseases of the genito-urinary system	1 (1.8%)	24 (11.7%)

daily living. Indeed, although patients were functioning reasonably well in the year prior to admission (highest GAF in the past year = 65.15, SD =12.87), functioning on admission was significantly impaired (GAF = 36.82, SD = 13.86), t(197) = 25.83, p < .001.

Comparisons of current and past patients

Demographic (age, gender) and clinical (diagnosis, number and types of medical illnesses, CGI-Severity scores) and length-of-stay differences between patients treated in 1997 and 1987 were examined via appropriate statistics (chi-square, t-test). Bonferroni corrections were used to maintain familywise error at p < .05 for the eight comparisons, as detailed in Table 10, setting the criterion alpha at p < .006.

A summary of demographic and clinical data for patients treated in 1987 and 1997 are presented in Tables 9 and 10. As can be seen therein, although patients treated in 1997 were older than those treated in 1987, the difference fell short of significant (p = .02). Similarly, although the ratio of males to females appeared smaller in 1997 when compare to 1987, the difference was not significant (p =.12). In contrast, whereas only 20.0% of patients presented with multiple psychiatric diagnoses in 1987, almost half (49.5%) of those treated in 1997 received multiple diagnoses, χ^2(1, N = 206) = 15.40, p < .005. Consistent with this finding, patients who were treated in 1997 had significantly greater mean numbers of psychiatric diagnoses when compared to their predecessors, t(176.97) = 5.76, p < .005. Similarly, diagnostic differences were noted in patients treated in 1987 and 1997,

Table 10
Comparison of Patients Treated in 1987 Versus 1997

	Year	
	1987 n = 55	1997 n = 206
Mean (± SD) age	73.9 ± 5.92	76.1 ± 6.69
Gender		
male	12 (22%)	67 (32.5%)
female	43 (78%)	139 (67.5%)
Mean (± SD) number of diagnoses *	1.2 ± 0.40	1.65 ± 0.81
Mean (± SD) # medical illnesses	3.49 ± 1.59	3.72 ± 2.26
Diagnostic grouping *		
Delirium, dementia, amnesia, and other organic mental disorders	5 (9.3%)	55 (26.7%)
Mood disorders	46 (85.2%)	116 (56.3%)
Schizophrenic and other psychotic disorders	1 (1.9%)	25 (12.1%)
Other disorders [a]	2 (3.7%)	10 (4.9%)
Secondary diagnoses (%) *	11 (20%)	102 (49.5%)
Primary or secondary dementia *	10 (18.5%)	80 (38.8%)
Mean (± SD) CGI-Severity [b]	5.38 ± 1.13	5.12 ± 1.08

[a] Other disorders included drug and alcohol disorders, neurotic disorders, and adjustment disorder.

[b] CGI-Severity scores for patients treated in 1997 were based on the 93 patients who provided consent to participate in the outcome evaluation.

* $p < .006$

$\chi^2(1, N = 206) = 16.01$ $p < .005$. Specifically, although affective disorders remained the most common presenting problems, results indicated that the number of patients presenting with affective disorders decreased in 1997, when compared to 1987 (56.3% vs 85.2%, respectively), while the prevalence of primary organic mental disorders was higher in more recent years than in the past (26.7% vs 9.3%, respectively). Consistent with these findings, the proportion of patients who presented with either a primary or secondary diagnosis of dementia was significantly higher in 1997, as compared to 1987 ($\chi^2(1, N = 206) = 6.83$ $p < .005$). No significant differences were found in medical burden, nor were differences in medical profiles significantly different across groups (Table 9). Finally, patients treated in 1987 presented with similar severity of illness on admission as those treated in 1997.

Comparisons of demented and non-demented patients

Demographic and clinical differences between demented and non-demented patients were examined via appropriate statistics (chi-square, t-test). As in the previous set of analyses, Bonferroni corrections were used to control for familywise error in multiple analyses, setting the criterion for the 11 comparisons (detailed in Table 11) alpha at $p < .004$. Comparisons of patients with and without dementia produced several significant demographic and clinical differences, as detailed in Table 11. As can be seen therein, and consistent with expectations, demented patients were significantly older than non-demented patients, $t(204) = 3.38$, $p < .004$. Further, whereas secondary diagnoses were applied to 38% of non-

Table 11
Demographic and Clinical Comparisons of Demented Versus Non-Demented Patients

	Demented status	
	Non-demented n = 126	Demented n = 80
Mean (± SD) age •	74.93 ± 6.06	78.10 ± 7.23)
Gender		
male	34 (26.4%)	33 (42.9%)
female	95 (73.5%)	44 (57.1%)
Mean (± SD) number of diagnoses •	1.51 ± 0.82	1.88 ± 0.73
Mean (± SD) # medical illnesses *	3.39 ± 2.14	4.26 ± 2.37
Admitted in year prior to current admission	37 (28.9%)	15 (19.2%)
Mean (± SD) GAF admission	38.69 ± 13.42	33.55 ± 14.11
Mean (± SD) GAF highest past year •	68.61 ± 1.10	58.93 ± 1.37
Impaired ADLs *	83 (64.3%)	67 (87.0%)
Suicide risk	43 (33.3%)	22 (28.6%)
Aggressive behaviors	25 (19.4%)	27 (35.1%)
Mean (+ SD) CGI-Severity admission[a]	5.05 ± 1.09	5.25 ± 1.07

[a] Because CGI-Severity scales were not routinely collected on the Unit, mean scores based on the 93 patients (37 demented and 56 non-demented) who provided consent to participate in the outcome evaluation.

* p < .004

demented patients, 67.5% of demented patients presented with multiple diagnoses, $\chi^2(1, N = 206) = 16.85$, $p < .004$. Consistent with this finding, demented patients presented with significantly greater numbers of psychiatric diagnoses, $t(204) = 3.28$, $p < .004$. Demented patients also presented with greater medical burden ($t(204) = 2.70$ $p < .004$). Not surprising then, demented patients were more likely to be rated by nurses as functionally impaired on admission ($\chi^2(1, N = 206) = 12.26$, $p < .004$) and rated by physicians as more impaired in their psychosocial functioning, based on the GAF, in the year preceding admission, $t(194) = 5.40$, $p < .004$. A post hoc analysis, designed to identify whether group differences in GAF scores in the past year would persist after controlling for the effects of age indicated that indeed, differences persisted even after the potential influence of age was removed ($F(2,193) = 23.92$, $p < .001$). Finally, a trend was noted wherein patients with dementia were near significantly more likely to display aggressive behaviours on admission than their non-demented counterparts ($\chi^2(1, N = 206) = 5.97$, $p = .01$). No measurable differences were noted in regard to severity of illness and general psychosocial functioning on admission.

Summary

These data suggest that patients who were treated on the ROH Geriatric Psychiatry In-Patient Unit in 1997 were predominantly severely medically, psychiatrically, and functionally compromised women who required treatment for depressions and/or dementia. Although patients who were treated in 1997 appeared older than their predecessors, the age difference did not reach significance. Similarly, although it was expected that patients treated in 1997 would be more medically burdened or psychiatrically ill than those treated in 1987, the findings did not support this hypothesis. In contrast, patients who were treated in 1997 presented with greater numbers of psychiatric problems, and had a higher prevalence rate for dementia, providing support for the expectations that patients, in 1997, would be more cognitively and/or psychiatrically impaired than their predecessors. Finally, and consistent with expectations, demented patients were older, presented with more medical and psychiatric problems, were more likely to require functional assistance, and displayed aggressive behaviours in greater frequency. Under these conditions, demented patients may be expected to require greater resources in terms of staff time than non-demented patients.

Identification of Impacts of Treatment for Patients

Of the 100 patients on whom outcome data were collected, 93 provided consent to have the data that was collected on them used for evaluative purposes. In order to assess the potential for self-selection bias, patients who provided consent were compared with those who refused on data that are routinely collected on the Unit, including age, gender, marital status, diagnosis (organic mental disorders, mood disorders, psychotic disorders, and other disorders), and CGI-Severity scores and GAF on admission and discharge. The Bonferroni correction was used to control for familywise error for the 11 analyses (detailed in Table 12) and set the criterion alpha at .004.

Table 12.

Differences Between Patients who Provided Consent and Those who Refused

	Consent status	
	Consent (n = 93)	No Consent (n = 7)
Age	75.77 ± 6.47	75.00 ± 5.89
Gender		
male	34 (37%)	0
female	59 (63%)	7 (100%)
Married	42 (45%)	1 (14%)
Diagnostic grouping *		
Organic mental disorders	22 (24%)	2 (28.5%)
Mood disorders	60 (64%)	2 (28.5%)
Psychotic disorders	8 (8.6%)	3 (42.9%)
Other disorders[a]	3 (3.2%)	0
CGI-Severity - admission	2.07 ± 0.11	2.17 ± 0.31
GAF - admission	38.80 ± 4.95	45.86 ± 13.11
GAF - discharge	61.11 ± 11.66	61.43 ± 12.49
CGI-Severity - admission	4.93 ± 1.11	4.50 ± 0.87
CGI-Severity - discharge	2.92 ± 1.26	3.0 ± 1.41
CGI-Improvement - discharge	1.98 ± 1.02	2.17 ± 0.75
Length-of-stay	40.41 ± 3.39	45.14 ± 10.71

[a] Other disorders included drug and alcohol abuse disorders, neurotic disorders, and adjustment disorder.

*$p < .004$

Basic demographic and clinical for those who provided consent and those who refused are presented in Table 12. Results of chi square analyses, using Fisher's exact test to compensate for the small expected frequencies, indicated that patients who provided consent did not differ significantly from those who refused in terms of the proportion who were married versus unmarried ($\chi2(1, \underline{N}=100) = 3.35$, ns) or gender ($\chi2(1, \underline{N}=100) = 3.66$, ns). Similarly, results of t-tests revealed that patients who provided consent did not differ significantly from those who refused in terms of age ($\underline{t}(98) = .39$, ns), illness severity on admission ($\underline{t}(96)=.94$, ns) or discharge ($\underline{t}(95)= .14$, ns), degree of impairment (GAF) on admission ($\underline{t}(98)=1.24$, ns) or discharge ($\underline{t}(98)= .07$, ns), rate of improvement based on CGI-Improvement scores ($\underline{t}(96)=.43$, ns), and GAF change scores ($\underline{t}(98) = 1.25$, ns), or length-of-stay ($\underline{t}(98) = .41$, ns). However, there was a significant difference in terms of the distributions of diagnostic groupings of patients who consented to treatment and those who refused ($\chi2$ (3, $\underline{N} = 100) = 17.68$, $\underline{p} < .004$). As can be seen in Table 12, compared to patients who consented, a disproportionate number of patients who refused had psychotic disorders. Because consent was not granted, the relationship between the provision of consent and outcome based on symptom severity and/or satisfaction with treatment could not be assessed.

Thus, patients who provided consent did not differ significantly, with respect to basic demographic variables such as age or gender, nor did they differ with respect to their overall level of illness severity or impairment on admission or discharge or their rate of improvement. However, whereas the most common diagnoses of patients who provided consent were affective disorders, the majority of patients who refused to provide consent received treatment for psychotic disorders. Therefore, this diagnostic group may be under represented in the results that follow.

Treatment Outcomes

The assessment of treatment impacts for consenting demented and non-demented patients began by classifying patients according to whether they had a primary or secondary diagnosis of dementia, as defined in DSM-IV. This classification resulted in 37 patients being categorized within the demented group and 56 falling into the non-demented group. Before comparing treatment outcomes, however, analyses were run to identify whether demented and non-demented patients received different treatment opportunities. This was designed to identify whether control of treatment variables would be required in analyses of outcomes.

Comparisons of treatment opportunities. Analyses designed to determine whether demented and non-demented patients differed in regard to their treatment management began with dichotomously categorizing patients according to whether they received interventions from each of the following disciplines: occupational therapy, physiotherapy, psychology, social work, recreation therapy, and dietary. Six separate chi square analyses, one per discipline, served to determine the extent to which demented and non-demented patients differed in treatment opportunities provided to them. A simple t-test was used to determine whether demented and non-demented patients differed in the length of their admission, while a chi-square analysis served to determine whether group differences were identifiable in reason for discharge. In order to compensate for multiple testings, a Bonferroni correction was applied and set the criterion alpha, based on 7 comparisons, at .007.

Results of the treatment discipline classification procedures indicated that demented and non-demented patients did not differ significantly in regard to treatment opportunities provided to them during the course of their in-patient stay. Similarly, results of the t-test indicated that group differences in length-of-stay between demented ($\underline{M}$ = 38.33 ± 25.54) and non-demented ($\underline{M}$ = 41.53 ± 32.46) patients were not significant ($\underline{t}(98) = .39$, ns). Finally, no significant group differences emerged with respect to reason for discharge ($\chi^2(5) = 6.55$, ns). Overwhelmingly, for both demented and non-demented patients, the most common reason for discharge was successful completion of treatment (77.9% and 82.9%, respectively). Demented and non-demented patients also had similar rates of discharges against medical advice (2.9% and 6.0%, respectively) and discharges due to medical needs requiring outside intervention (10.3% and 7.7%, respectively). Only 1 (non-demented) patient died while on the unit. The remaining patients had been discharged for other various reasons, the most common of which were transfers to another unit or to a long-term care facility. Thus, patients with and without dementia were provided with similar treatment opportunities and were discharged for similar reasons.

Clinical outcomes. Analyses of differences over time, between patients with and without dementia were assessed using two mixed 2 (time) x 2 (demented vs non-demented) multivariate analyses of variance (MANOVA)[28], one for the clinical status measures, the other for the measures of functioning. A similar mixed 2 (time) x 2 (dementia status) ANOVA was conducted on life satisfaction scores.

Preliminary analyses for the MANOVA conducted on psychopathology (CGI-Severity and PsychSentinel scales) identified 3 outliers in the non-demented group's PsychSentinel scale scores, 1 on admission and 2 at discharge ($\underline{z}$'s > 3.0, $\underline{p} < .001$) and indicated that variances for PsychSentinel scores at discharge were significantly different for demented (variance = 1124.36) and non-demented (variance = 298.78) patients, Bartlett-Box $\underline{F} = 19.09$, $\underline{p} < .001$. This univariate violation also led to violations of the multivariate assumption of homogeneity of variance-covariance matrix, Box's M = 40.83, $\underline{F}(10,24369) = 3.86$, $\underline{p} < .001$. Because the F test is not robust to outliers and heterogeneity in variances is a concern when the variability is greater in the smaller group (Tabachnick & Fidell, 1989) a square root transformation was applied to the PsychSentinel scale scores.

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[28] Repeated ANOVAs and MANOVAs require that several assumptions be met. First, data should be normality distributed. Analyses, to this end, began with a search for univariate, and for the multivariate analyses, multivariate, outliers. Univariate outliers were tested by transforming the data into standardized Z-scores, while multivariate outliers were assessed using the Mahalanobis distances. In both instances, criteria for outliers were set at $\underline{p} < .001$ (Stevens, 1986; Tabachnick & Fidell, 1989). Next, univariate normality was assessed according to the recommendations of Wilks, Shapiro, and Chen (1968) and involved dividing skewness and kurtosis coefficients by their respective standard errors to obtain z-scores and examining the probability that the Z-score is significantly different (using $\underline{p} < .001$) from the standard mean of 0 (Tabachnick & Fidell, 1989), while multivariate normality was not tested directly as the sample sizes produced more than 20 df for error, suggesting that the multivariate F test was robust to deviations in multivariate normality (Tabachnick & Fidell, 1989). A check of within-cell scatter plots served to ensure that relationships were linear. Univariate homogeneity of variance were assessed using the Bartlett-Box F test, while the multivariate homogeneity of variance-covariance assumption was evaluated using the Box's M test. The assumption required of repeated measures analyses, that all covariances in the pooled matrix be equivalent, was assessed using Mauchley's test of sphericity. Finally, where multivariate analyses were performed, Bartlett's test of sphericity served to assure that the dependent variables were sufficiently related to each other. For all symmetry tests, the criterion of $\underline{p} < .001$ was used, as recommended by Hakstain, Roed, and Lind (1979).

Following transformation, no outliers were found and all symmetry assumptions were satisfied.

Results of the 2 (time) x 2 (dementia status) MANOVA on indicators of severity of psychopathology (CGI-Severity and the PsychSentinel) uncovered a significant main effect for time, Pillais = .71, $F(2,89) = 112.56$, $p < .05$), indicating that patients, collapsed across diagnostic groupings, improved significantly in terms of the severity of their psychopathology from admission to discharge. This significant effect was reflected on both the CGI-Severity scale ($F(1,90) = 137.62$, $p < .05$, $\eta^2 = .61$) and the PsychSentinel scale ($F(1,90) = 200.59$, $p < .05$, $\eta^2 = .70$). Analyses also revealed a significant multivariate group by time interaction, Pillais = .15, $F(2,89) = 7.43$, $p < .05$). Univariate follow-up analyses indicated that this effect was not significant for the PsychSentinel scale ($F(1,90) = 3.10$, ns, $\eta^2 = .03$). In contrast, the interactive effect was significant for the CGI-Severity scale ($F(1,90) = 5.91$, $p < .05$, $\eta^2 = .12$). Simple effects analyses, detailed in Table 13, revealed that even after using the Bonferroni correction to maintain familywise error at $p < .05$, both non-demented ($t(55) = 11.53$, $p < .025$) and demented ($t(36) = 5.95$, $p < .025$) patients experienced significant reductions in severity of illness over the course of treatment. However, the simple effect of group at each measure of time indicated that the groups did not differ significantly in terms of global severity of illness on admission ($t(91) = 1.13$, ns), but by discharge the non-demented group exhibiting significantly less severe illness than the demented group ($t(90) = 6.00$, $p < .025$), suggesting greater improvement in the non-demented group.

Table 13

Mean (± SD) for Outcome Measures for Demented and Non-Demented Patients

	Diagnostic Grouping		
Outcome measure	Non-demented patients (n = 56)	Demented patients (n = 37)	Significance test of group difference
CGI-Severity			
Admission	5.05 ± 1.09	5.25 ± 1.07	t(91) = 1.13, ns
Discharge	2.69 ± 1.33	3.97 ± 1.37	t(90) = 6.00, p < .025
Paired t-test	t(55) = 11.53, p < .025	t(36) = 5.95, p < .025	
PsychSentinel [a]			
Admission	62.13 ± 25.45	80.22 ± 40.55	t(91) = 2.64 p < .025
Discharge	16.08 ± 17.29	44.31 ± 35.53	t(90) = 5.28, p < .025
Paired t-test	t(55) = 14.46, p < .025	t(36) = 6.82, p < .025	
GAF			
Admission	37.14 ± 12.51	30.27 ± 15.09	t(91) = 2.73, p < .025
Discharge	63.79 ± 14.45	48.48 ± 16.70	t(90) = 4.59, p < .025
Paired t-test	t(55) = 12.96, p < .025	t(36) = 6.63, p < .025	
WHO DAS-S social			
Admission	3.19 ± 1.20	3.79 ± 1.40	t(91) = 2.18, p = .03
Discharge	1.35 ± 1.21	2.91 ± 1.75	t(90) = 5.01, p < .025
Paired t-test	t(55) = 9.57, p < .025	t(36) = 3.60, p < .025	
WHO DAS-S ADL			
Admission	1.91 ± 1.20	3.20 ± 1.69	t(91) = 3.93, p < .025
Discharge	0.86 ± 1.15	2.70 ± 1.67	t(90) = 6.29, p < .025
Paired t-test	t(55) = 5.55, p < .025	t(36) = 2.85, p < .025	
Life Satisfaction [b]			
Admission	3.17 ± 1.62	3.91 ± 1.85	t(72) = 1.15, ns
Discharge	5.11 ± 1.08	5.18 ± 1.33	t(68) = .28, ns
Paired t-test	t(44) = 10.04, p < .025	t(24) = 3.53, p < .025	

[a] Although the t-tests for the PsychSentinel are based on square root transformed data, for simplicity sake, raw PsychSentinel scores are presented for each group.

[b] Data for the Life Satisfaction Scale were available for 74 patients on admission (48 non-demented and 26 demented) and 70 patients on discharge (45 non-demented and 25 demented).

Assumptions for the 2 (time) x 2 (dementia status) MANOVA on the functioning variables (GAF, WHO DAS-S social functioning and ADL subscales) were satisfied. Results uncovered a significant main effect for time, Pillais = .69, $F(3,88) = 58.68$, $p < .05$), indicating that patients, collapsed across diagnostic groupings, improved significantly in terms of functioning during the course of hospitalization. This significant effect was reflected on each of the GAF ($F(1,90) = 172.65$ $p < .05$, $\eta^2 = .66$), the WHO DAS-S social functioning subscale ($F(1,90) = 71.93$ $p < .05$, $\eta^2 = .46$), and the WHO DAS-S ADL subscale ($F(1,90) = 30.02$, $p < .05$, $\eta^2 = .25$). The group by time multivariate interaction was also significant (Pillais = .11, $F(3,88) = 3.76$ $p < .05$). Univariate follow-up analyses indicated that this interaction effect was not significant for the GAF ($F(1,90) = 3.59$, ns, $\eta^2 = .04$) nor the WHO DAS-S ADL subscale ($F(1,90) = 3.52$, ns, $\eta^2 = .04$). In contrast, interactive effects were significant for the WHO DAS-S social adjustment subscale ($F(1,90) = 11.47$ $p < .05$, $\eta^2 = .09$). Simple effects analyses, detailed in Table 13, revealed that even after using the Bonferroni correction to maintain familywise error at $p < .05$, both the non-demented group ($t(55) = 9.57$, $p < .025$) and demented group ($t(36) = 3.60$, $p < .025$) exhibited significant improvements in social functioning. The simple effect of group at each measure of time further indicated near significant group differences on admission ($t(91) = 2.18$, $p = .03$) but significant differences, with the non-demented group exhibiting less severe social impairment, by discharge ($t(90) = 5.01$, $p < .025$).

Finally, all assumptions for the 2 (time) x 2 (dementia status) ANOVA on the

Global Life Satisfaction scale[29] were satisfied. Results indicated a significant main effect for time, ($F(1,68) = 57.92$, $p < .05$, $\eta^2 = .45$), indicating that all patients, collapsing across diagnostic grouping, experienced significant improvements in the quality of their life over the course of treatment. The group by time interaction was not significant ($F(1,68) = 5.67$, ns, $\eta^2 = .10$), nor was the main effect dementia status ($F(1,68) = 4.71$, ns, $\eta^2 = .03$.), suggesting that patients with and without dementia experienced similar changes in self-ratings of Life Satisfaction.

To sum, the expectation that patients would improve over the course of hospitalization was upheld. On all measures, the effects of treatment as indicated by admission-discharge differences were significant and effect sizes were strong. Moreover, and consistent with earlier hypotheses, demented patients responded less favourably to treatment on measures of global severity of illness and social functioning. However, contrary to what was expected, although non-demented patients appeared to respond better to treatment than demented patients on all measures, group differences over time were not significant for severity of symptoms (PsychSentinel scale), general overall functioning, activities of daily living, or ratings of Life Satisfaction.

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[29] Data for the Global Life Satisfaction Scale were available for 74 patients on admission (48 non-demented and 26 demented) and 70 patients on discharge (45 non-demented and 25 demented). On admission, missing data was attributed to patient inability to comprehend the scale due to psychiatric impairments, and/or patients refusing to complete the scale. On discharge, missing data was attributed to patients' inability to comprehend the scale or to their being discharged before being provided with the opportunity to complete the scale, i.e. discharged for medical reasons or against medical advice. Comparisons of patients on whom data was missing and those who for whom it was not missing indicated that those for whom data were missing were more severely ill based on the CGI-Severity scale on both admission ($t(92) = 3.75$, $p < .001$) and discharge ($t(91) = 4.03$, $p < .001$) (no differences were found based on dementia status).

Patient satisfaction with treatment. Patient satisfaction data were available on 90 patients, 55 of whom provided their names on the surveys. Analyses of patient satisfaction began with identifying the percentage of patients who were satisfied/dissatisfied with the treatment that they received. Because mental health literature has consistently reported satisfaction ratings of 70 to 80 percent (Favaro, 1995), and following the recommendation of Ferris et al. (1992), total CSQ scores that fell in the fourth quartile of possible scores were taken to represent satisfaction. Based on this criteria, patients whose score on the satisfaction survey was equal to, or greater than 45 (out of 60) were deemed to have been satisfied with their treatment, while scores below 45 were indicative of dissatisfaction. A similar approach was used to assess patient satisfaction with specific facets of treatment (the custom items) - a rating of 3 or 4 indicated satisfaction, while scores below 3 were taken to represent dissatisfaction with the specific item. Examination of these individual items was designed to provide information that would be useful from a quality assurance perspective (i.e. to identify areas of strength and weaknesses on the Unit). Particular attention was given to facets of treatment where in excess of 10% of patients indicated displeasure since the literature suggests that a rate of dissatisfaction higher than 10% indicates problems with a program's service delivery (Lebow, 1983). Finally, for patients who chose to provide their names on the satisfaction survey, a t-test served to examine differences between demented and non-demented patients in total CSQ scores and for each individual tem while chi square tests compared the proportion of demented vs non-demented patients who were dissatisfied with specific facets of treatment. Based on the Bonferroni technique, the criteria for significance of these multiple tests, designed to maintain the familywise error rate at $p < .05$, was set at $p < .002$.

Based on the criteria outlined above, 90% of patients were satisfied with the services that they received at the ROH. Out of a maximum possible of 60 points, the mean total satisfaction score was 51.81 ± 7.79. Patients with dementia and without dementia did not differ in their overall mean satisfaction score (50.22 ± 7.59 vs 51.32 ± 5.76, $t(53)=.60$, ns) nor did they differ in regard to mean satisfaction scores for specific facets of treatment (all ns).

Satisfaction rates for specific facets of treatment are presented in Table 14. Of particular note was the finding that 16.7% of all patients were dissatisfied with the amount of information that was provided to them regarding what they could expect from their treatment while 12.2% were dissatisfied with each of the following: staff explanation of their illness, with their level of improvement, and with the opportunities provided to them concerning their treatment options. Fewer than 10% of patients expressed dissatisfaction with other facets of treatment. Finally, no significant differences were noted in the proportion of demented versus non-demented patients who were dissatisfied with specific aspects of treatment (all ns).

To sum, and counter to expectations, no significant differences in treatment satisfaction were found between demented and non-demented patients. Results indicated that patients were, generally speaking, satisfied with the treatment that they received on the Geriatric Psychiatry In-Patient unit. However, some areas

Table 14

Mean (+SD) Satisfaction Scores and Number (%) of Patients Dissatisfied with Specific Facets of Treatment

Satisfaction item	Mean ± SD	n (%) dissatisfied
You felt safe while in hospital	3.35 ± 0.76	9 (10%)
Staff were supportive of your needs	3.43 ± 0.62	4 (4.4%)
You felt involved in decisions regarding your treatment	3.50 ± .94	10 (11.1%)
You were treated with respect	3.49 ± 0.67	6 (7.7%)
Staff helped you to come to a better understanding of your illness	3.23 ± 0.75	11 (12.2%)
Staff appeared to be knowledgeable	3.44 ± 0.63	5 (5.6%)
Your symptoms were reduced following the treatment you received	3.30 ± 0.75	11 (12.2%)
Staff explained your treatment options to you	3.23 ± 0.73	11 (12.2%)
Staff made it clear what you could expect from your treatment	3.23 ± .072	15 (16.7%)
Overall satisfaction score (maximum = 60)	51.81 ± 7.79	9 (10%)

Note. Results of t-tests on group means (overall and individual items) and chi square analyses on proportions of patients dissatisfied with treatment (overall and individual items) all failed to reach significance.

were identified for quality improvement consideration, most of which indicate that patients desire more information and wish to be more involved in their treatment plan.

Analyses of residual symptoms. Only 10% of patients were in complete remission by discharge. A chi quare test, designed to assess whether demented patients were more likely to be discharged with residual symptoms than non-demented patients. indicated that while all demented patients were discharged with residual symptoms, only 47 (83.9%) of non-demented patients were symptomatic at discharge, $\chi 2(1, \underline{N} = 92) = 3.65$, $\underline{p} < .05$.

Closer scrutiny of residual symptoms was undertaken for the four most prevalent diagnoses (primary or secondary) as categorized by the PsychSentinel scale: depressive disorders, dementia, manic disorders, and other organic mental disorders/psychotic/affective disorders NOS[30]. Within each syndrome, examinations of the specific symptoms whose prevalence was significantly lowered from admission to discharge were examined using multiple McNemar statistics. Because of expectations that patients would be discharged prior to full remission, paired t-tests were used to compare mean admission and discharge scores for each symptom within each syndrome. This latter set of analyses was designed to elucidate symptoms that, while not completely resolved, responded well to treatment. Bonferroni corrections maintained the familywise error rate at $\underline{p} < .05$ for

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[30] Not Otherwise Specified.

each of the multiple sets of McNemar and paired t-tests within each diagnosis.

Mean symptom scores on admission and discharge, accompanied by the proportion of patients exhibiting each symptom, are presented separately for the four syndromes in Tables 15-18. Turning first to depressive disorders, as can be seen in Table 15, a total of 54 patients had received a primary or secondary diagnosis of depression. Although all depressive symptoms were present, to varying degrees upon discharge, the prevalence of each symptom, with the exception of suicide risk, was reduced significantly from admission to discharge. Similarly, with the exception of suicide, all symptoms improved significantly from admission to discharge (all p's $< .004$). Although the significance of change in suicide symptom risk did not change significantly over the course of treatment, both the mean symptom score, as well as the prevalence of the symptom, indicated trends toward improvement (p's $= .005$ and $.03$, respectively). Moreover, given that the prevalence and mean severity scores for suicide risk were both low on admission, lack of significant changes may have been the result of floor effects.

Consideration of the 37 patients who presented with a primary or secondary diagnosis of dementia (Table 16) reflected that, as with depressive symptoms, all symptoms were present upon discharge. Symptoms whose prevalence were significantly reduced by discharge included anxiety and psychomotor agitation. Despite scarce significant changes in prevalence rates, the severity of many dementia symptoms improved significantly (p's $< .004$) over the course of treatment. To this end, significant improvements were noted for impaired judgement, each of

Table 16

Mean Scores and Prevalence of Dementia Symptoms on Admission and Discharge (n = 22)

	Mean ± SD		n (%)	
Residual Symptom	Admission	Discharge	Admission	Discharge
Loss of intellectual abilities ^	3.07 ± 1.72	2.47 ± 1.72	23 (76.7%)	22 (73.3%)
Impaired memory ^	3.60 ± 1.22	3.13 ± 1.36	27 (90.0%)	27 (90.0%)
Impaired abstract thinking ^	2.80 ± 0.86	2.53 ± 1.74	21 (70.0%)	22 (73.3%)
Impaired judgement ^	3.73 ± 0.98	2.80 ± 1.45 *	28 (93.3%)	26 (86.7%)
Personality changes #	1.27 ± 0.98	0.93 ± 0.91	19 (63.3%)	17 (56.7%)
Persecutory delusions #	0.93 ± 1.01	0.27 ± 0.58 *	14 (46.7%)	6 (20.2%)
Aggressiveness/hostility #	0.80 ± 1.00	0.13 ± 0.35 *	12 (40.0%)	4 (13.3%)
Anxiety #	1.47 ± 0.90	0.47 ± 0.57*	22 (73.3%)	13 (43.3%) *
Psychomotor agitation ^	2.67 ± 1.92	0.73 ± 1.11 *	20 (66.7%)	10 (13.3%) *
Prominent delusions ^	1.87 ± 2.03	0.60 ± 1.07 *	14 (46.7%)	8 (26.7%)
Depersonalization ^	0.67 ± 1.52	0.07 ± 0.37	5 (16.7%)	1 (3.3%)
Emotional lability #	0.93 ± 1.01	0.37 ± 0.61 *	14 (46.7%)	9 (30.0%)

Note. The significance of changes from admission to discharge in mean symptom scores were examined via t-statistics, while changes in prevalence estimates were examined using McNemar statistics. In order to maintain the familywise error rate at $p < .05$, the criterion for significance was set at $p < .004$.

~ Range of possible scores is 0-1
# Range of possible scores is 0-2
^ Range of possible scores is 0-4

* $p < .004$

Table 17

Mean Scores and Prevalence of Manic Symptoms on Admission and Discharge (n = 12)

	Mean ± SD		n (%)	
Residual Symptom	Admission	Discharge	Admission	Discharge
Expansive/irritable mood ~	1.33 ± 0.98	0 *	8 (66.7%)	0
Grandiose, > self esteem ~	1.00 ± 1.04	0.08 ± 0.29	6 (50.0%)	1 (8.3%)
Decreased need for sleep #	0.58 ± 0.51	0.12 ± 0.31	7 (58.3%)	2 (16.7%)
More talkative than usual ~	0.75 ± 0.45	0.21 ± 0.33	9 (75.0%)	4 (33.3%)
Flight of ideas #	1.58 ± 0.79	0.33 ± 0.49 *	10 (83.3%)	4 (33.3%)
Dysphoria ~	0.50 ± 0.52	0.08 ± 0.29	6 (50.0%)	1 (8.3%)
Psychomotor agitation #	1.17 ± 1.03	0.08 ± 0.29 *	7 (58.3%)	1 (8.3%)
Excessive high risk activities ~	0.08 ± 0.29	0.04 ± 0.14	1 (8.3%)	1 (8.3%)
Impaired role functioning ^	2.33 ± 2.06	0.50 ± 0.90	7 (58.3%)	3 (25.0%)
Impaired social activities #	1.50 ± 0.90	0.42 ± 0.51 *	9 (75.0%)	5 (41.7%)
Delusions ^	2.00 ± 2.09	0.33 ± 0.78	6 (50.0%)	2 (16.7%)
Hallucinations ^	0.67 ± 1.56	0	2 (16.7%)	0

Note. The significance of changes from admission to discharge in mean symptom scores were examined via t-statistics, while changes in prevalence estimates were examined using McNemar statistics. In order to maintain the familywise error rate at $p < .05$, the criterion for significance was set at $p < .004$.

~ Range of possible scores is 0-1
# Range of possible scores is 0-2
^ Range of possible scores is 0-4

* $p < .004$

Table 18

Mean Scores and Prevalence of Symptoms of Organic and/or Affective/Psychotic NOS on Admission and Discharge (n = 9)

	Mean ± SD		n (%)	
Residual Symptom	Admission	Discharge	Admission	Discharge
Delusions/hallucinations ^	2.67 ± 0.88	0.44 ± 0.88	6 (66.7%)	2 (22.2%)
Impaired long-term memory #	1.33 ± 1.00	0.78 ± 0.67	6 (66.7%)	6 (66.7%)
Inability to learn new information #	1.56 ± 0.88	0.56 ± 0.73	7 (77.8%)	4 (44.4%)
Depressed mood #	1.11 ± 1.05	0	5 (55.6%)	0
Panic attacks #	0.67 ± 1.008	0	3 (33.3%)	0
Generalized anxiety #	0.67 ± 1.56	0.22 ± 0.44	3 (33.3%)	2 (22.2%)
Affective instability #	1.56 ± 0.88	0.33 ± 0.78 *	7 (77.8%)	3 (33.3%)
Recurrent rageful outbursts #	0.67 ± 1.00	0.11 ± 0.33	3 (33.3%)	1 (11.1%)
Poor impulsive control #	0.89 ± 1.05	0	4 (44.4%)	0
Apathy/indifference ^	1.33 ± 2.00	0	3 (33.3%)	0
Suspiciousness/paranoia ~	0.89 ± 0.33	0.11 ± 0.22 *	8 (88.9%)	2 (22.2%)
Suicidal ideation/attempt ~	0.33 ± 0.50	0	3 (33.3%)	0

Note. The significance of changes from admission to discharge in mean symptom scores were examined via t-statistics, while changes in prevalence estimates were examined using McNemar statistics. In order to maintain the familywise error rate at $p < .05$, the criterion for significance was set at $p < .004$.

~ Range of possible scores is 0-1
# Range of possible scores is 0-2
^ Range of possible scores is 0-4

* $p < .004$

persecutory and prominent delusions, aggressive behaviours, anxiety, psychomotor agitation, and emotional lability.

Turning to results of the 12 patients with a diagnosis of manic disorder (Table 17), results indicated that most manic symptoms were present, to varying severities and in varying frequencies, upon discharge. Although two symptoms had completely remitted by discharge (expansive or irritable mood and hallucinations), none of the changes in prevalence rates, using $p < .004$ as the criterion, reached significance. However, given that the prevalence of both of these symptoms were low on admission, lack of significant changes may have been the result of statistical floor effects. Despite scarce significant reductions in prevalence rates, 4 symptoms were found to have a significantly improved from admission to discharge (expansive/irritable mood, flight of ideas, impaired social functioning, and psychomotor agitation), while low scores on admission may have contributed to the lack of significant changes in excessive high risk activities.

Finally, of the 4 syndromes detailed, organic and/or affective/psychotic NOS symptoms were most likely to remit with treatment, but least likely, probably due to small Ns, to respond significantly to treatment (Table 18). Indeed, of the 12 symptoms, 5 were fully remitted by discharge (depressed mood, panic attacks, poor impulse control, apathy, and suicidal ideation/attempts). Although prevalence estimates for all other symptoms were lower on discharge, as compared to admission, the only symptom whose prevalence demonstrated even a trend toward significant reduction was suspiciousness/paranoia ($p < .05$). Consideration of mean values revealed that only suspiciousness/paranoia and affective instability improved significantly over the course of treatment ($p < .004$).

In summary, and consistent with expectations, demented patients were more likely to be discharged prior to complete remission than non-demented patients. Moreover, results indicated that although all syndromes demonstrated good improvement over the course of treatment, those which responded best to treatment (based on the number of individual symptoms whose prevalence rate decreased significantly and based on the number of significant changes in mean symptom scores from admission to discharge) were depressive disorders. Within depressive disorders, the only symptom which did not respond significantly to treatment was suicide risk. However, the prevalence and mean severity scores for suicide risk were both low on admission, suggesting that lack of significant changes may have been the result of floor effects. Symptoms of dementia were more persistent upon discharge, as compared to depressive symptoms. Consistent with this finding, significant reductions in prevalence rates were noted for only two symptoms (anxiety and psychomotor agitation) while significant reductions in symptom severity were noted for seven of the 12 symptoms. Dementia symptoms whose severity did not improve significantly over the course of treatment were loss of intellectual abilities, impaired memory, impaired abstract thinking, personality changes, and depersonalization. The persistence of manic illnesses were also evident in the scarcity of significant changes in prevalence rates. However, although floor effects were implicated in the lack of improvement in several manic symptoms, including excessive high risk activities and hallucinations, significant improvements were noted for only expansive/irritable mood, psychomotor agitation, and impaired social activities. Finally, organic and/or affective/psychotic NOS disorders presented with fewer significant improvements than any of the other disorders detailed herein. In fact, although several symptoms had completely remitted by discharge, including depressed mood, panic attack, poor impulse control, apathy, and suicidal ideation, only 2 symptoms demonstrated significant improvements in mean score (affective instability and suspiciousness/paranoia).

Follow-up analyses. Follow-up data were available on 58 patients (41 non-demented and 17 demented patients). In order to determine whether demented and non-demented patients maintained their treatment response post-discharge, two separate 2 (time - discharge to follow-up) x 2 (dementia status) mixed ANOVAs (one on the CGI-Severity scale, the other on the Life Satisfaction Scale) and a 2 (time) x 2 (dementia status) mixed MANOVA (on measures of functioning) were carried out. Where significant effects were indicated, admission to follow-up data were similarly explored to determine whether significant changes at follow-up indicated ratings that were similar to those which had been noted on admission. Tests of the assumptions revealed no threat to any of the analyses.

Beginning with CGI-Severity scores (Figure 2), the interaction contrast assessing discharge to follow-up differences did not reveal a significant main effect for time nor a significant interaction effect ($Fs < 1$). Similarly, the interaction contrast assessing discharge to follow-up differences on the combined WHO DAS-

S subscales and the GAF (Figure 4) did not reflect a significant main effect for time ($\underline{F} < 1$) or a significant interaction effect (Pillais = .08, $\underline{F}(2,55) = 1.29$, ns).

In contrast, although interaction contrasts assessing discharge to follow-up differences in Life Satisfaction Scores[31] indicated no significant interaction effect ($\underline{F}(1,31) = 3.74$, ns, $\eta^2 = .11$), the main effect for time was significant ($\underline{F}(1,31) = 10.39$, $\underline{p} < .05$, $\eta^2 = .25$) and reflected that patients, collapsing across diagnostic groupings, experienced a significant regression in self-rated quality of life from discharge to follow-up (Figure 3). Consideration of admission to follow-up data indicated that despite regressions from discharge to follow-up, follow-up ratings of Global Life Satisfaction were generally higher than admission ratings ($\underline{F}(1,31) = 6.14$, $\underline{p} < .05$, $\eta^2 = .17$). However, a significant group by time interaction ($\underline{F}(1,31) = 8.50$, $\underline{p} < .05$, $\eta^2 = .22$) suggested that these changes were not uniform across diagnostic groups. Indeed, simple effects analyses, using the Bonferroni correction to maintain familywise error at $\underline{p} < .05$, indicated that while admission to follow-up improvements in self-rated life satisfaction were significant for the non-demented group ($\underline{t}(23) = 15.12$, $\underline{p} < .025$), differences in the demented group were not significant ($\underline{t}(8) = .31$, ns).

To sum, expectations that both demented and non-demented patients would maintain their treatment response from discharge to follow-up were upheld for both severity of psychopathology and functional capacities. However, counter to

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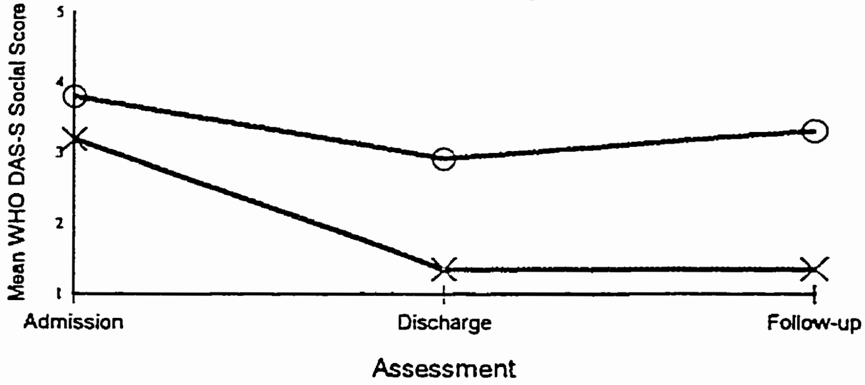
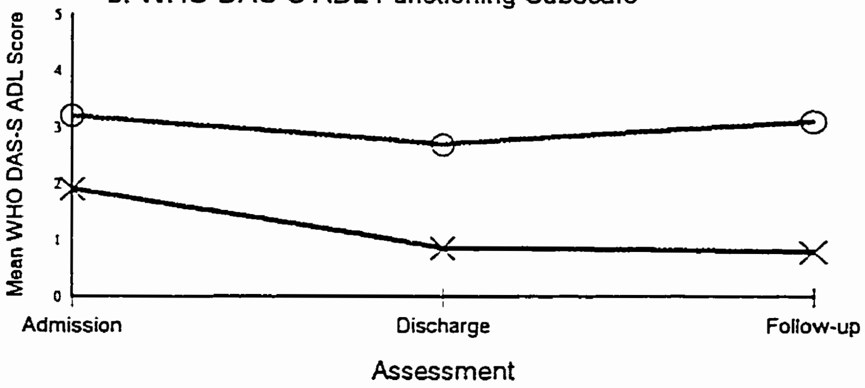
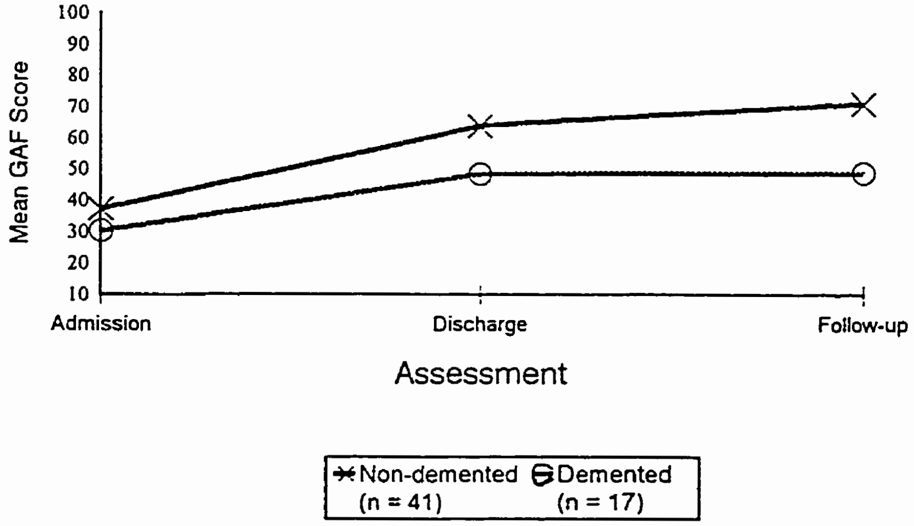
[31] Ratings of Global Life Satisfaction were available for 33 patients at follow-up (9 demented and 24 non-demented patients). Missing data was attributed to patient inability to comprehend the rating scale.

Figure 4. Mean functioning scores by dementia status


a. WHO DAS-S Social Functioning Subscale *


b. WHO DAS-S ADL Functioning Subscale *


c. GAF Scale ^

* WHO DAS-S Social and ADL subscales range from 0 (no impairment) to 5 (extremely impaired)
^ GAF scale ranges from 1 (extremely impaired) to 100 (excellent functioning)

expectations, patients experienced significant regressions in subjective quality of life from discharge to follow-up. Nonetheless, and consistent with expectations, ratings of life satisfaction were significantly better at follow-up than they had been on admission for the non-demented group. However, counter to expectations, ratings of life satisfaction regressed sufficiently in demented patients from discharge to follow-up so as to reflect no significant improvement from admission to follow-up.

Predicting treatment outcome

In order to identify the patient characteristics that were associated with good treatment outcomes and to test the theory that these variables influence outcome by virtue of their relationship to participation, two analytical steps were taken. First, the relationship between patient characteristics and treatment outcome and the potential mediating effect of participation were examined via a hierarchical standard multiple regression. Second, the relationship between patient characteristics and participation in treatment was examined via a logistic regression. For both analyses, all of the patient characteristics were entered together based on the assumption that each would add to the prediction models[32]. Treatment response was based on the CGI-Improvement scale. The predictor variables that were examined are identified in Table 19 and included treatment resistance, dementia

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[32] Results based on statistical regression (i.e. stepwise and backward elimination techniques) produced similar results. Results of the standard regression were ultimately used because of the desire to test the hypothesized predictive model, including the joint contribution of the variable set and the identification of the relative contribution of each predictor.

Table 19

List and Definitions of Variables Used to Predict Outcome

Variable	Definition
Treatment resistance	Rating of highest GAF in past year
Diagnosis	Dichotomous (y/n) based on presence of dementia
Medical burden	Enumeration of documented ICD-9-CM medical diagnoses
Severity of symptoms	Clinician rating on the PsychSentinel scale on admission
Suicide potential	Dichotomous (y/n) based on presence of prior or current suicide attempts/ideations
Violence potential	Dichotomous (y/n) based on presence of past or current assaultive behaviours
ADL limitations	Dichotomous (y/n) based on documented requirement for assistance with any activity of daily living on ROH-ADL Scales
Psychosocial functioning	Clinician rating on GAF on admission
Participation in treatment	Dichotomous (y/n) based on nurse ratings at discharge

Note. With the exception of the PsychSentinel scale, the predictors were selected from among those that were most readily available on admission and were widely used and likely to be as accessible in similar institutes across Canada, as dictated by the Canadian Institute for Health Information.

status, medical burden, severity of symptoms, suicide risk, violence potential, ADL limitations and psychosocial functioning[33]. Finally, participation was based on nurse ratings at discharge which were dichotomized into active (very active or

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[33] Tests of assumptions for the regression analysis indicated that only 13% of patients who were to be included in this analysis had a history or current issue with substance abuse comorbidity. Because the potential for such skewness to distort correlations, the variable was dropped from the analysis.

moderately active) versus not active (resistant, refused, or unable to participate)[34]. Complete data for these analyses were available for 70 patients.

Predicting treatment outcome. Tests of assumptions identified significant deviation from normality in the criterion variable, CGI-Improvement (KS(92) = 24, $p < .001$). Further scrutiny attributed skewed distribution to the presence of three outliers (z scores in excess of 3.0). These outliers also appeared to impact on the multivariate distribution. Because deletion of the outliers may have eliminated some potentially clinically significant data, the CGI-Improvement variable was logged transformed[35]. Following transformation of the criterion, no outliers were detected and a check of the shape of the scatter plot of residuals against predicted logged CGI-Improvement scores indicated that the assumptions regarding the distributions of residuals (normality, homoscedasticity and linearity) were met. The assumption that all observations were independent was upheld based on the Durbin-Watson statistic (1.75).

Results confirmed that patients who were rated as more active in their

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[34] This dichotomy was selected because fewer than 12% of patients fell into the latter three categories, necessitating, from a statistical perspective, the grouping of patients who fell into these categories in order to increase the size of the group. The decision to create 2, rather than 3 (very active, moderately active, not active) categories was based on the decision to use a logistic regression analysis to examine the extent to which patient characteristics accounted for participation in treatment (as opposed to a multiple regression analysis using the three tiered criterion whose validity, given the lack variability in participation scores, would have been questionable).

[35] Although transformation does change the functional relationship between the criterion and predictors, the interval scale properties of the 7-point rating scale were questionable to begin with. Given that this transformation retains the ordinal properties of the scale, concerns regarding the effect of transformation of the criterion were minimal.

treatment were significantly more likely to achieve good outcomes (low scores on the CGI-improvement scale) than patients who were not active in treatment ($\underline{r}$ = -.25, $\underline{p} < .05$). When patient characteristics were added to the regression equation, results reflected a significant correlation between the predictors and the logged CGI-Improvement values ($\underline{R}$ = .49, $\underline{F}(9, 60) = 2.16$, $\underline{p} < .05$), indicating that 24.0% of the variability in treatment outcome was accounted for by patient characteristics and participation in treatment. This suggests that after controlling for participation, consideration of patient characteristics contributed an incremental 17% of explained variance to the model which, while substantial, was shy of significant, $\underline{F}(8, 60) = 1.80$, $\underline{p} = .09$.

As can be seen in Table 20, the patient characteristics that contributed significantly to the prediction of treatment outcome were dementia status ($\beta = .27$, $\underline{p} < .05$), and GAF scores on admission ($\beta = -.35$, $\underline{p} < .05$). That is, non-demented patients with relatively good psychosocial functioning achieved relatively good outcomes. Although the relatively small and nonsignificant simple correlation between GAF scores on admission and treatment outcome may have been indicative of the effects of a suppressor variable influencing the relationship between this predictor and outcome, no suppressors were found.

Predicting participation in treatment. Results of the logistic regression analysis to identify patient characteristics that predicted participation in treatment are presented in Table 21. The eight patient characteristics, as expected, together predicted participation in treatment χ^2 (8, $\underline{N}$ = 70) = 22.74, $\underline{p} < .05$. To this end,

Table 20

Summary of Hierarchical Regression Analysis for Predicting Treatment Outcome (n = 70)

Predictors	B	SE B	Beta	r	sr^2
Step 1.					
Participation	-0.17	0.07	-0.3 *	-0.25 *	0.07
Step 2.					
Impaired ADLs on admission	0.03	0.06	0.07	0.08	0
Dementia status	0.12	0.06	0.27 *	0.26 *	0.06
Highest GAF last year	-0.003	0.002	-0.02	-0.11	0
GAF on admission	-0.005	0.002	-0.35 *	-0.13	0.08
PsychSentinel on admission	0.001	0.001	0.16	0.13	0.02
Violence risk	-0.06	0.07	-0.1	-0.08	0
Suicide risk	-0.003	0.05	-0.007	-0.07	0
Medical burden on admission	0.01	0.01	0.12	0.13	0.01

Note.

	Step 1	Step 2
R^2	.07*	.24*
Adjusted R^2	.05*	.13*
R^2 increment		.17

* $p < .05$

Table 21

Summary of Hierarchical Logistic Regression Analysis for Predicting Participation in Treatment (n = 70)

Predictors	B	SE B	Exp. B	Wald	W	pr^2
Impaired ADLs on admission	-0.7	1.01	0.5	0.49	-0.26 *	0
Dementia status	-1.07	0.86	0.34	1.53	-0.25 *	0
Highest GAF last year	0.07	0.04	1.07	3.37	0.28 *	0.02
GAF on admission	0.07	0.03	1.08	5.66 *	0.33 *	0.05
PsychSentinel on admission	0.02	0.01	1.02	2.55	0.05	0
Violence risk	0.14	0.95	1.16	0.02	-0.12	0
Suicide risk	1.38	0.86	3.98	2.55	0.02	0
Medical burden on admission	-0.24	0.19	0.78	1.59	-0.01	0

* $p < .05$

Classification Results

Actual group	# cases	Predicted group: non-active participants	Predicted group: active participants	Percent correct
Non-active participants	15	5	10	33.3%
Active participants	55	3	52	94.6%

Note. Percent of grouped cases correctly classified: 81.43%

group membership was accurately predicted for 81.43% of patients (33.3% for non-active participants and 94.6% for active participants). However, although simple Kendall's Tau-b correlations indicated significant relationships between participation in treatment and each of activities of daily living on admission (W = -.26, $p < .05$), dementia status (W = -.25, $p < .05$), highest GAF in the past year (W = .28, $p < .05$), and GAF on admission (W = .33, $p < .05$), only highest GAF on admission made a significant independent contribution to the prediction of participation. Specifically, results indicated that patients with good psychosocial functioning on admission were more likely to be active participants in treatment. To the extent that being relatively low functioning in the year prior to admission, having dementia, and being impaired in activities of daily living on admission were indicative of low levels of participation may be attributed to their relationships with other variables, most notably GAF in the years prior to admission.

Summary of variables that predict treatment outcome. To sum, 24% of the variability in treatment outcome was accounted for by the proposed prediction model. As expected, good participation in treatment was associated with better treatment outcomes. Consideration of patient characteristics contributed an additional, though nonsignificant, 17% of explained variance. Of these, and as expected, non-demented patients who were higher functioning on admission achieved better outcomes. None of the other variables contributed significant unique variance to the prediction of length-of-stay.

Consideration of variables that predicted participation in treatment indicated

Table 22

List and definitions of variables designed to predict length-of-stay

Variable	Definition
Residential status	Dichotomous (y/n) based on whether patient lived alone prior to admission
Diagnosis	Dichotomous (y/n) based on presence of dementia
Medical burden	Enumeration of documented ICD-9-CM medical diagnoses
Suicide potential	Dichotomous (y/n) based on documentation of suicide attempts and/or ideations
Violence potential	Dichotomous (y/n) based on documentation of assaultive behaviour, current or in past
Impaired activities of daily living	Dichotomous (y/n) based on documented requirement for assistance with any activity of daily living on ROH-ADL Scales
Severity of symptoms	Clinician rating on PsychSentinel on admission
Premorbid functioning	Highest level of GAF in year prior to admission

Note. With the exception of the PsychSentinel scale, the predictors were selected from among those that were most readily available on admission and were widely used and likely to be as accessible in similar institutes across Canada, as dictated by the Canadian Institute for Health Information.

Tests of assumptions. Computations of probabilities for the studentized residual scores using all patients for whom data were available identified six outliers in the dependent variable. In addition, histograms of residual length-of-stay scores revealed apparent deviations from normality which were confirmed by the KS-Lilliefors statistic (KS(70) = .13 $p < .001$). Further, the shape of the scatter plot of residuals against predicted length-of-stay scores indicated that, in addition to violations of normality, the assumptions regarding the distributions of residuals (homoscedasticity and linearity) appeared to be somewhat violated. Several options were available to deal with the outliers, including deleting the outlying cases (which may have eliminated some potentially clinically relevant data that occur naturally in the dependent variable) or transforming the data (which would have rendered the interpretation of the regression data less meaningful by changing the nature of the functional relationship). In light of the limitations of these options, and following the guidelines of Tabachnick & Fidell (1989), outlier scores were manipulated by assigning the outlying cases a raw score that was at least one unit larger than the non-outlying most extreme score in the distribution. In order to maintain the ordinal integrity of the data, new scores were assigned that maintained the scores' relative positions in the distributions[38]. Following the assignment of new scores, no outliers were detected and violations of the distribution assumptions appeared to be satisfied. Examinations of the distributions of the continuous predictor variables uncovered one outlying case on the variable highest GAF in the past year. This outlier was adjusted, following the strategy used for the dependent variable, to the next unit of data. The assumption that all observations were independent was upheld as indicated by the Durbin-Watson statistic (1.95). Finally, comparisons of the simple correlations to the criterion and beta weights for each of the significant predictors identified no suppressor variables.

Results. Results indicated a significant correlation between the predictors

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[38] For example, the largest non-outlying score number of days in treatment was 103. The smallest outlying score was therefore assigned a score of 104 days. The next smallest extreme score was assigned 105 days. And so on.

and the observed length-of-stay values ($\underline{R} = 0.47$, $\underline{F}(8, 69) = 2.48$, $\underline{p} < .05$) which reflected that 22.0% of the variability in length-of-stay was accounted for by the eight predictors. Results of this analysis are detailed in Table 23. As can be seen therein, three of the eight variables contributed significant unique variance to predicting length-of-stay: severity of symptoms on admission ($\beta = .33$, $\underline{p} < .05$), being impaired in activities of daily living on admission ($\beta = .24$, $\underline{p} < .05$), and living alone on admission ($\beta = .22$, $\underline{p} < .05$). Specifically, patients who were more severely symptomatic on admission required relatively longer length-of-stays than patients who were less severely ill. Similarly, length-of-stay for patients who were impaired in their ADLs ($\underline{M} = 43.7 \pm 24.5$) was, on average, 11.5 days longer than that of patients who required no assistance with their ADLs ($\underline{M} = 32.2 \pm 24.5$). Finally, length-of-stay for patients who lived alone ($\underline{M} = 37.7 \pm 23.8$) was, on average, 11 days longer than that of patients who did not live alone ($\underline{M} = 48.8 \pm 29.4$). None of the other variables made significant unique contributions to the prediction model.

Summary of variables that predict length-of-stay. Three variables interacted to explain 22% of the variability in length of stay. Specifically, and as expected, living alone, being impaired in activities of daily living, and higher ratings of severity of symptoms on admission were associated with longer admissions. However, contrary to expectations, dementia status, medical burden, risk of violence or suicide and highest level of functioning in the year prior to admission did not contribute any unique variance to the predictive model.

Table 23

Summary of Standard Regression Analysis for Variables Predicting Length-of-Stay (n = 78)

Variables	B	SE B	Beta	r	sr^2
Impaired activities of daily living on admission	12.29	5.96	.24 *	.23 *	0.05
Living alone on admission	14.16	7.17	.22 *	0.24 *	0.04
Risk of violence	4.4	6.65	0.07	0.02	0
PsychSentinel on admission	0.26	0.09	0.33 *	0.33 *	0.1
Highest GAF past year	0.15	0.22	0.08	-0.01	0
Medical burden on admission	-1.97	5.71	-0.15	-0.1	0.02
Suicide Risk	-4.61	5.71	-0.09	-0.02	0
Dementia status	-8.13	5.79	-0.16	-0.08	0.02

Note. $R^2 = .22$

* $p < .05$

Identification of Impacts of Treatment for Caregivers

A total of 89 caregivers were contacted upon their relatives' admission to the hospital and asked to participate in the study. Of these, 77 consented and provided admission BAS scores[39]. Data from two of the caregivers who agreed to participate were excluded from analyses because they had attended formal Caregiver Support groups which may have introduced a confound in the assessment of change in caregiver burden. Data from two other caregivers were eliminated from the analyses because their relative changed residence from admission (living in their own homes) to discharge (transferred to nursing homes). Finally, data were missing for two caregivers at follow-up. Complete data, then, were available for 71 caregivers at follow-up. Of the 71 caregivers, 27 (38%) had relatives who had a primary or secondary diagnosis of dementia, while 44 (62%) were caregivers of non-demented patients. As anticipated, only a minority of demented care recipients lived in the community ($\underline{N}$ = 10, 37%), whereas most non-demented care recipients were community dwelling ($\underline{N}$ = 36, 81.8%), $\chi^2(1, \underline{N} = 71) = 14.71$, $\underline{p} < .001$. Finally, no differences emerged with respect to kin relation by diagnostic grouping, $\chi^2(2, \underline{N} = 71) = 3.83$, $\underline{p}$ = ns). Children comprised the largest group of respondents ($\underline{N}$ = 46, 64.8%), followed by spouses ($\underline{N}$ = 17, 23.9%), and other relatives[40] ($\underline{N}$ = 8, 11.3%).

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[39] Consent to participate in the evaluation had been granted by all patient relatives of these caregivers.

[40] Other relatives consisted of nieces, nephews, grandchildren, and siblings.

Caregiver burden on admission

Analyses of caregiver burden began with an examination of the most prevalent and troublesome burdens that caregivers in this evaluation faced. Subsequently, a 2 (patient dementia status) x 2 (BAS subscales) mixed ANOVA was carried out, using standard BAS scores[41], to identify differences in burden experiences between caregivers of demented and non-demented patients. Irrespective of the significance of the omnibus effects, exploratory analyses of within group differences were carried out, using standard BAS subscale scores, to determine whether, within each caregiving group, differences in experiences of objective and subjective burden were significant. Similarly, exploratory analyses were carried out via multiple t-tests to identify any group differences in individual burden items. Bonferroni corrections to maintain the familywise error rates in these multiple analyses at $\underline{p} < .05$ resulted in setting the criterion at $\underline{p} < .002$.

Description of caregiver burden on admission. Results indicated that, on admission, all (100%) of caregivers experienced some burden associated with their caregiving responsibilities. As can be seen in Table 24, out of a possible maximum score of 76 (range 19-76), the mean total BAS score was 43.19 ± 11.94. Turning to Table 25, the most frequently cited objective burdens were difficulty concentrating, not having enough leisure time, and disruptions in household routines (expressed by 84.5%, 80.3%, and 73.2% of respondents, respectively).

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[41] Standard scores were used due to different possible ranges of values in the 2 subscales.

Two of these three burden items, difficulty concentrating and disruptions in personal time, were also rated as the most persistent of objective burden items (M's = 2.77 ± 1.08 and 2.77 ± 1.15, and respectively). Less common were frictions with neighbours and/or friends and financial strains (29.6% of respondents each), which were also rated as among the least troublesome of objective burdens (M's = 1.68 ± 1.14 and 1.52 ± 0.91, respectively).

The most prevalent and persistent subjective burdens involved being worried about what the future holds for one's relative (experienced by 87.3% of respondents, M = 3.18 ± 1.07), distress as a result of the changes that caregivers have witnessed in their relative (experienced by 77.5% of respondents, (M's = and 2.86 ± 1.22), and feelings of guilt for not doing enough to help the ill relative (experienced by 74.6% of respondents, M = 2.63 ± 1.19). Less common were feelings of embarrassment over the patient's behaviours and concerns regarding the stigma associated with psychiatric illnesses (33.8% and 35.2% of respondents, respectively), which were also rated as among the least troublesome of subjective stresses (M's = 1.68 ± 1.08 and 1.86 ± 1.27, respectively).

Differences in caregiver burden between and within groups. Although ratings of both subjective and objective burden were slightly higher for caregivers of non-demented patients than caregivers of demented patients (Table 24), interaction and main effects for groups were not significant (F's >1), nor were significant group differences for any of the individual burden items noted (all p's ns). Similarly, results did not uncovered a main effect for the BAS subscales (F > 1) nor were significant differences in standard BAS objective and subjective subscale scores found for either caregivers of non-demented (t (46) = .45, p = ns) or demented (t (29) = .57, ns) patients. Results were similar when analyses were run using only caregivers of demented patients who lived in long-term care facilities and caregivers of non-demented patients who lived in the community.

Summary. To sum, results indicated that all of the caregiver respondents in this evaluation experienced similar levels of both objective and subjective burden associated with their caregiving role. The most common objective burdens involved difficulty concentrating, disturbed personal time, and disrupted household activities. Frictions outside of the home and financial strains were less common. The most common subjective stresses included worrying about what the future holds for one's relative, distress about changes seen in the relative, and guilt for not doing enough to help. Embarrassment over the patients' behaviours and distress surrounding the stigma associated with the illness were less common. Finally, although it was expected that caregivers of demented patients would experience more subjective burden (relative to caregivers of demented patients and relative to objective burden) while caregivers of non-demented patients would experience more objective burden (relative to caregivers of demented patients and relative to subjective burden), results did not support this hypothesis.

Change in caregiver burden

In order to examine changes in burden over time and to determine if caregivers of non-demented and demented patients responded differently to their relative's treatment, three separate 2 (time) x 2 (demented vs non-demented) ANOVAs[42] were carried out, one using total BAS scores, and one each for the subjective and objective BAS subscales. Main effects of time were examined first to determine treatment impacts for caregivers, irrespective of their patient relatives' diagnosis. Next, group by time interaction effects were examined to identify caregiver group (caregivers of demented versus non-demented patients) differences in admission to follow-up changes in burden. Irrespective of the significance of the omnibus interaction effects, follow-up analyses were performed to examine burden experiences that were most likely to change (or not change) within each of the caregiving groups. In this regard, changes in overall, objective, and subjective BAS scores were examined separately for caregivers of demented and non-demented patients. In order to maintain the familywise error rate within each caregiving group at $\underline{p} < .05$, a Bonferroni correction was applied, setting the criterion for significance in these analyses at $\underline{p} < .017$. The purpose of these latter analyses was to provide information that could be used, clinically, for the purposes of quality improvement.

Caregiver response to hospitalization. Mean admission and discharge BAS scores total, subjective, and objective values are presented in Table 24. Preliminary analyses (as detailed earlier) uncovered no violations of the mixed ANOVA assumptions for either of the three ANOVAs. Results of the first ANOVA,

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[42] Control of CGI-Improvement was contemplated but deemed not necessary given that results were identical when CGI-Improvement was controlled and not controlled.

using total BAS scores, uncovered a significant main effect for time, $F(1,69) = 22.65$, $p < .05$, $\eta^2 = .25$), indicating that caregivers, irrespective of their relative's diagnosis, experienced significantly less burden at follow-up, as compared to what they had expressed on admission. Similar main effects for time were noted for both the BAS objective ($F(1,69) = 13.70$, $p < .05$, $\eta^2 = .17$) and subjective ($F(1,69) = 19.87$, $p < .05$, $\eta^2 = .22$) subscales.

Results of more detailed analyses of the specific burden items that were most responsive to change are presented in Table 25. Most likely to change were the objective items pertaining to leisure time and friction within others outside of the family and the subjective items pertaining to being embarrassed by the patients' behaviours, feeling guilty for not doing enough to help, and being worried about the impact of one's behaviour on the illness.

Group by time differences. Analyses of total BAS scores failed to uncover a significant caregiver group by time interaction nor were significant interaction effects found for the BAS subjective or objective subscales (Fs > 1). Similarly, main effects of group status were not significant for either BAS total scores, BAS objective subscale scores, or BAS subjective subscale scores (Fs > 1).

Results of a priori follow-up analyses, detailed in Table 24, revealed that although caregivers of non-demented patients experienced significant improvements in each BAS total, subjective, and objective scores, caregivers of demented patients experienced significant improvements in subjective BAS scores only.

Table 25

Prevalence of Caregiver Burden on Admission and Mean Scores on Admission and Discharge

	n (%)	Mean ± SD	
Burden Item[a]	Admission	Admission	Discharge
1. Financial strain	21 (29.6%)	1.52 ± 0.91	1.51 ± 0.97
2. Missed work days	27 (38.0%)	1.68 ± 1.00	1.58 ± 1.04
3. Difficulty concentrating	60 (84.5%)	2.77 ± 1.08	2.38 ± 1.10
4. Forced to change plans	49 (69.0%)	2.41 ± 1.18	2.18 ± 1.21
5. Less leisure time	57 (80.3%)	2.77 ± 1.15	2.35 ± 1.23
6. Upset household routine	52 (73.2%)	2.65 ± 1.20	2.15 ± 1.19
7. Less time with friends	48 (67.6%)	2.62 ± 1.27	2.13 ± 1.14 *
8. Neglected others' needs	38 (53.5%)	2.14 ± 1.24	1.79 ± 1.09
9. Frictions with family	37 (52.1%)	2.14 ± 1.25	1.68 ± 1.11
10. Friction with others	21 (29.6%)	1.68 ± 1.14	1.25 ± 0.69 *
11. Embarrassed by behavior	24 (33.8%)	1.68 ± 1.08	1.24 ± 0.64 *
12. Guilt for not doing enough	53 (74.6%)	2.63 ± 1.19	2.06 ± 1.11 *
13. Felt responsible for problems	27 (38.0%)	1.82 ± 1.16	1.39 ± 0.78
14. Resented relative's demands	40 (56.3%)	2.00 ± 1.10	1.61 ± 1.02
15. Felt trapped by caregiving role	47 (66.2%)	2.48 ± 1.27	2.13 ± 1.19
16. Upset by change in relative	55 (77.5%)	2.86 ± 1.22	2.37 ± 1.31
17. Worried about impact of behavior on illness	40 (56.3%)	2.15 ± 1.19	1.62 ± 0.98 *
18. Worried about relative's future	62 (87.3%)	3.18 ± 1.07	2.82 ± 1.13
19. Found stigma upsetting	25 (35.2%)	1.86 ± 1.27	1.89 ± 1.23

Note. The significance of changes from admission to discharge in mean symptom scores were examined via t-statistics. In order to maintain the familywise error rate at $p < .05$, the criterion for significance was set at $p < .002$.

[a] Burden items 1 though 10 denote objective burdens, while items 11 through 19 are subjective burdens. Items range from 1 (not at all) to 4 (a lot).

* $p < .002$

Summary. As expected, caregivers experienced significant reductions in total burden following the hospitalization and discharge of their patient relative. Moreover, significant reductions were noted in both subjective (η^2 = .22) and objective (η^2 = .17) burden. Consideration of changes in mean scores for individual stressors indicated that improvements were generally better for subjective, as opposed to objective, burden items.

Counter to expectations, analyses of group differences in changes in overall BAS and each of the BAS subscales indicated that caregivers of demented and non-demented patients responded similarly to their relative's hospitalization. Nonetheless, more detailed analyses provided some preliminary support for the contention that, whereas caregivers of non-demented patients experienced improvements in all types of burden, caregivers of demented patients experienced significant reductions in only subjective burden.

Group differences on the Professional Support Scale

A t-test served to determine whether caregivers of patients with dementia received greater professional support than caregivers of non-demented patients. Between and within group differences in experiences of specific types of support (instrumental and affective) were examined using a 2 (dementia status) x 2 (support type) mixed ANOVA. Support scores were standardized for this analysis due to the different possible ranges of values in the two subscales.

Results indicated that out of a possible maximum score of support of 44 (range 11-44), caregivers reported a mean Professional Support Scale score of

29.80 ± 9.15. Caregivers of demented ($\underline{M}$ = 30.93 ± 8.85) and non-demented ($\underline{M}$ = 28.63 ± 9.17) patients felt that they had received similar levels of professional support, $\underline{t}(69) = .94$, ns). Finally, results of the 2 x 2 ANOVA did not indicate a significant group by support type interaction nor were significant main effects for either ementia status or support type found (Fs < 1).

Thus, contrary to expectations, caregivers of demented patients did not receive more professional support than caregivers of non-demented patients. Further, and counter to expectations, caregivers of demented and non-demented patients did not perceived that they had received different types of supports.

Predicting change in caregiver burden

The relationship between professional support and burden was first examined at the global level. Nonsignificant relationships were noted between the global index of professional support and the BAS total change scores ($\underline{r} = .09$, ns). Controlling for a patient's dementia status and improvement (based on the CGI-Improvement scale) did not enhance these relationships.

Given a priori hypotheses, exploratory analyses were undertaken based on the multidimensional nature of both professional support and burden to assess the extent to which specific types of support related to each subjective and objective burden, information that could lead to the development of effective intervention strategies for caregivers. To this end, two separate hierarchical multiple regression analyses were undertaken, one to identify variables that were most predictive of change in caregiver subjective burden response, the other to identify variables that predicted change in objective burden, controlling for the influences of the patients' dementia status and clinical improvement (CGI-Improvement scale scores). Dementia status and CGI-Improvements were entered on the first block, while the Professional Support Scale items were entered simultaneously on the second block. Simultaneous entry of the predictor variables served to assess the contribution of the overall model and to identify specific support items that contributed independent variance to the predictive model[43].

Tests of assumptions. Assumptions for both regression analyses were met. However, as detailed within each analysis, comparisons of simple correlations between each predictor and the criterion and the beta weights for each predictor implicated suppressor variables in both analyses.

Predicting change in BAS subjective scale scores. Results of the hierarchical regression of CGI-Improvement, dementia status, and Professional Support Scale items on change in subjective BAS scores are displayed in Table 26. The multiple correlation between BAS subjective difference scores and CGI-Severity and dementia status entered on step one was small (R= 0.08) and non-significant (F(2, 68) = .17, ns). The addition, at step two, of the Professional Support items added a substantial proportion of explained variance to the model (R^2

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[43] Although stepwise regression was considered, it was deemed inappropriate given that the variables that were to compete for entry were highly correlated. According to Cohen (1983), under these circumstances, potentially important variables may not enter the equation because "the computer will dutifully choose the largest for addition....(such that) the losers in the competition may not make a sufficiently large unique contribution to be entered at any subsequent step before the problem is terminated by nonsignificance" (p. 124). As a result, the model may not generalize to other samples or the population.

Table 26

Summary of Hierarchical Regression Analysis for Predicting Change in Caregiver Subjective Burden (n = 71)

Predictors	B	SE B	Beta	r	sr^2
Step 1.					
CGI-Improvement	0.5	0.82	0.1	-0.02	0
Dementia status	-0.1	2.01	-0.01	-0.08	0
Step 2. Professional Support Scale Items[a]					
1. Information regarding illness	-0.92	1.54	-0.13	-0.06	0
2. Information regarding treatment	0.54	1.51	0.08	-0.01	0
3. Help locating resources for self	1.27	0.84	0.29	0.08	0.04
4. Help locating resources for relative	0.39	0.76	0.09	0.05	0
5. Practical advice	0.95	0.91	0.21	0.13	0.01
6. Advice for future planning	1.59	0.84	0.35	0.1	0.06
7. Assistance for emergencies	0.82	0.83	0.19	0.02	0.02
8. Positive reinforcement for caregiving abilities	1.46	0.89	0.32	0.11	0.04
9. Encouragement to be involved in decisions regarding treatment plan	2.51	0.94	0.49 *	0.17 *	0.11
10. A nonblaming attitude	1.86	0.77	0.41 *	0.08	0.1
11. Encouragement to invest energy in noncaring aspects of life	2.01	0.81	0.45 *	0.17 *	0.1

Note.	Step 1	Step 2
R^2	.01	.32
Adjusted R^2	.00	.11
R^2 increment		.32

[a] Items 1-7 demote instrumental supports, while 8-11 are affective support items. Items range from 1 (not at all) to 4 (a lot).

* $p < .05$

Support items added a substantial proportion of explained variance to the model (R^2 change = 0.32), although the increment did not reach significance ($F(11, 57) = 1.81$, $p = .09$). Although the final prediction model ($R = 0.57$) was not significant ($F(13, 57) = 1.52$, $p = .15$), the provision of three types of support were positively and significantly related to BAS subjective change scores: encouragement to be involved in decisions regarding the patients' treatment plan ($\beta = .49$, $p < .05$); encouragement to invest energy in non-caring aspects of the caregivers' lives ($\beta = .45$, $p < .05$) and; a nonblaming attitude ($\beta = .41$ $p < .05$). However, a relatively small simple order correlation between the latter predictor and change in BAS subjective burden scores suggested that a nonblaming attitude was predictive of the criterion by virtue of its relationship to a suppressor variable. Further analyses identified the suppressor variable as the support item pertaining to encouragement to invest energy in noncaring aspects of one's life. In other words, only after controlling for the effects of this support item was the impact of a nonblaming attitude deemed predictive of change in subjective burden.

Predicting change in BAS objective scale scores. Results of the regression to identify variables that are most influential in predicting change in BAS objective subscale scores are displayed in Table 27. As can be seen therein, the canonical correlation between BAS subjective difference scores and CGI-Severity and dementia status entered on step one ($R= 0.32$) fell shy of significant ($F(2, 68 = 2.93$, $p = .07$). The addition, at step two, of the Professional Support items added a substantial (R^2 change = 0.30) and significant ($F(11, 57) = 1.98$, $p \leq .05$) proportion

Table 27

Summary of Hierarchical Regression Analysis for Predicting Change in Caregiver Objective Burden (n = 71)

Predictors	B	SE B	Beta	r	sr^2
Step 1.					
CGI-Improvement	0.04	0.92	0.01	-0.19	0
Dementia status	-3.09	2.27	-0.21	-0.31*	0.03
Step 2. Professional Support Scale Items[a]					
1. Information regarding illness	-0.59	1.74	-0.07	0.06	0
2. Information regarding treatment	1.85	1.71	0.23	0.19	0.02
3. Help locating resources for self	-0.1	0.94	-0.02	0.07	0
4. Help locating resources for relative	0.91	0.86	0.17	0.02	0.02
5. Practical advice	1.16	1.03	0.21	0.14	0.02
6. Advice for future planning	0.6	0.95	0.11	0.02	0
7. Assistance for emergencies	0.02	0.93	0	0.12	0
8. Positive reinforcement for caregiving abilities	1.91	1.01	0.35	0.03	0.04
9. Encouragement to be involved in decisions regarding treatment plan	2.83	1.07	0.46 *	0.24 *	0.1
10. A nonblaming attitude	2.34	0.87	0.42 *	0.16	0.11
11. Encouragement to invest energy in noncaring aspects of life	1.98	0.92	0.37 *	0.24*	0.07

Note.	Step 1	Step 2
R^2	.10	.40*
Adjusted R^2	.07	.21*
R^2 increment		.30*

[a] Items 1-7 demote instrumental supports, while 8-11 are affective support items. Items range from 1 (not at all) to 4 (a lot).

* $p < .05$

of explained variance to the model. Overall, the canonical correlation associated with the prediction model ($\underline{R} = 0.63$) was significant ($\underline{F}(13, 57) = 2.12$, $p < .05$), and indicated that 40% of the variability in BAS objective change scores could be predicted by knowing the extent to which caregivers perceived that they had received professional support and by knowing the patients' dementia status and rate of clinical improvement.

Further scrutiny of the regression model, detailed in Table 27, identified three Professional Support Scale items that contributed significant unique variance to predicting the change in objective caregiver burden: encouragement to be involved in decisions regarding the patients' treatment plan ($\beta = .46$, $\underline{p} < .05$), encouragement to invest energy in non-caring aspects of the caregivers' lives ($\beta = .37$, $\underline{p} < .05$) and a nonblaming attitude ($\beta = .42$, $\underline{p} < .05$). However, a relatively small simple order correlation between the latter predictor and change in BAS objective burden scores suggested that a nonblaming attitude was predictive of the criterion by virtue of its relationship to a suppressor variable. Further analyses identified the suppressor variable as the support item pertaining to encouragement to invest energy in noncaring aspects of one's life. In other words, only after controlling for the effects of this support item was the impact of a nonblaming attitude deemed predictive of change in objective burden. Nonetheless, examination of the betas of these three predictors suggested that the provisions of these instrumental types of support was associated with greater positive change in objective burden. Although dementia status, clinical improvement, and the remaining Professional Support Scale items contributed an additional 12% of explained variance to the prediction model, the contribution made by each was not significant.

Summary. Counter to expectations, no significant relationship was found between total BAS and Professional Support Scale scores. However, further analyses in the form of two separate hierarchical regression analyses served to identify the types of professional support that were most likely to predict reductions in each caregiver objective and subjective burden, controlling for patients' dementia status and clinical improvement. Contrary to expectations, attempts at predicting improvement status in subjective burden failed to uncover a significant predictive model. In contrast, the model that was developed to predict change in objective caregiver burden was significant and indicated that, after controlling for the influence of a patients' dementia status and clinical improvement, professional support was accountable for 30% of the variability in BAS objective burden change scores. Both models suggested that three of the instrumental support items, encouragement to be involved in decisions regarding the treatment plan, a nonblaming attitude, and encouragement to invest energy in noncaring aspects of life were most closely associated with positive changes in caregiver objective and subjective burden.

Chapter 10. DISCUSSION

An evaluation of the Royal Ottawa Hospital Geriatric Psychiatry In-Patient Unit, an acute care geropsychiatric in-patient unit, was undertaken in order to address several issues. While social, political, and economic forces dictated the general issues that were to be addressed in this evaluation, a review of the literature served to provide a theoretical framework and to provide more specific directions with regard to the exact questions that required deliberation and hypotheses that were subsequently investigated. In this regard, and insofar as the Royal Ottawa Hospital Geriatric Psychiatry In-Patient Unit is representative of other geropsychiatric in-patient units, the findings of this evaluation may be generalized to other similar units. The multiple issues and questions that were addressed in this evaluation were grouped into three primary categories: identifying patient characteristics, assessing treatment impacts for patients, and identifying impacts of treatment for relative caregivers.

Issues pertaining to patient characterizations

The first issue that was raised in this evaluation pertained to the need to characterize geropsychiatric in-patients and to provide comparisons of demented and non-demented patients as well as comparisons of patients who were treated in 1997 to those of patients who were treated a decade ago. Identifying patient characteristics was deemed important because this knowledge may lead to greater understanding of the burden under which geropsychiatric units operate (Harrison et al., 1988) and may serve to qualify or facilitate the interpretation of outcome data

(Adams & Cohen, 1995). Comparing characteristics of current patients to patients treated in the past may serve to validate whether geropsychiatry units, including the ROH Unit, are treating patients who are more impaired with briefer admissions. Finally, given expectations of increased prevalence of dementia in the next 30 years, knowledge of how the growing demented population differs from non-demented patients may serve to project the demands to which geropsychiatric in-patient units will need to respond and to better estimate the burdens under which they will increasingly be expected to operate.

The findings of this evaluation presented a profile of geropsychiatric in-patients that is consistent with findings of earlier studies (Gilchrist et al., 1985; Harrison et al., 1988; Zubenko et al., 1997). This profile is suggestive of a population of elderly, predominantly community dwelling widowed women who present with multiple medical and psychiatric problems. Although depressive disorders were the most commonly applied diagnoses, the Unit has witnessed, as was expected, an increase in the number of patients who present with dementia in the past ten years. This knowledge is clinically meaningful because our findings, the first to detail clinical differences between demented and non-demented patients, indicated that demented patients are more likely to present with multiple psychiatric and medical problems, are more likely to have a poor premorbid level of psychosocial functioning, and present, in greater frequencies, with aggressive behaviours and impairments in their abilities to carry out activities of daily living. As the proportion of geropsychiatric patients with dementia increases, then, resource requirements of geropsychiatric in-patients are likely to escalate, as staff (sometimes multiple staff) must tend to the high care needs of patients to provide not only psychiatric treatment, but also to offer assistance in activities of daily living and to deal with aggressive behaviours. Thus, assuming, based on current political and economic conditions, that geropsychiatric in-patient resources stay the same, these data suggest that the burden under which geropsychiatric units currently operate will continue to grow. They also suggest that the efficacy of geropsychiatric in-patient care, in light of limited resources and increasing complex clinical profiles, may be expected to diminish over time, as the number of patients who are admitted with dementia continues to rise. Longitudinal evaluations of geropsychiatric in-patient treatment will be needed to test these hypotheses.

Issues pertaining to treatment impacts

Outcome issues were examined in this evaluation based on the need, given a growing discrepancy between population demands and available resources, to document treatment impacts. To this end, and given differences in characteristics of demented and non-demented patients, it was deemed important to identify whether the growing population of demented patients improved in similar ways over the course of hospitalization as their non-demented counterparts. Further, identifying variables that predict treatment outcome was deemed necessary to assist clinicians and administrators in prospectively identifying patients for whom hospitalization is most likely to be of benefit. Finally, an impending prospective funding system will require predictive models of resource allocation suggesting a global severity of illness and social functioning. Significant group differences in the present evaluation, in light of previous findings, are attributed to the use of measures that provided meaningful and sensitive comparisons across diagnostic groups. The implications of these findings are twofold. First, they suggest that patients with dementia may experience significant reductions in many of the signs and symptoms associated with dementia and may be expected to gain greater independence in terms of their ability to perform activities of daily living. Second, they suggest that some of the more treatment resistant signs and symptoms associated with dementia may dampen gains made in general clinical status and social functioning.

Examinations of symptom profiles at discharge suggested that 90% of patients were discharged with residual symptoms and that demented patients were more likely to be symptomatic at discharge than non-demented patients. Although this was the first evaluation study to detail the specific symptoms that are most likely to improve over the course of multidisciplinary hospital care, the findings concur with clinical drug trial data (Jenike, 1985; Reynolds et al., 1987; Wragg & Jeste, 1989). In this regard, the behavioural signs and symptoms that often accompany dementia, including delusions, aggressiveness, anxiety, psychomotor agitation, and emotional lability improved significantly over the course of hospitalization. However, results confirmed the lack of effective treatments for reversing the cognitive impairments that are the core markers of dementia (Gurland, 1996), including impaired abstract thinking, loss of intellectual abilities, and impaired memory. The persistence of these symptoms may account for the different rates of improvement that were noted in overall severity of illness between demented and non-demented patients. Also resistant to change in demented patients are personality changes and depersonalization, symptoms which may be expected to reap interference with social functioning. Overall, however, these findings confirm that despite the progressive deterioration that is characteristic of most dementia (Zubenko et al., 1992), short-term hospitalization appears to be effective in ameliorating many of the behavioural symptoms and syndromes that often complicate the management and treatment of patients with dementia.

Symptoms associated with disorders other than dementia, including depressive disorders, manic disorders and organic mental disorders and/or affective/psychotic NOS disorders appeared to be more responsive to treatment. In particular, significant admission to discharge improvements were noted on all but one depressive symptom, risk of suicide (whose mean value was low to begin with). These findings are analogous to clinical drug trials that have reported good outcomes of depressive disorders (Hinrichsen, 1992; Mulsant et al, 1991; NIH Consensus Conference, 1992) and confirm that although complete remission may not be a realistic goal given short length-of-stays, significant improvements may nonetheless be made to the point where the patient may be treated with less resource intensive treatments.

This study also went further than other evaluations in the field by documenting longer term impacts of hospitalization. In this regard, results indicated that both demented and non-demented patients were successful in maintaining their clinical and functional treatment responses up to one month following discharge. Although these findings are based exclusively on patients who received follow-up care, they provide preliminary evidence of the appropriateness of not only discharge criteria and discharge planning but also the potential efficacy of aftercare programs, including the use of day hospitals, outpatient services, and outreach services. Additional studies, however, are needed to provide follow-up assessments in patients who received versus those who did not receive these aftercare services in order to draw definitive conclusions concerning the efficacy of the follow-up care.

Outcomes in this evaluation were not limited to measures of clinical status and functioning. Also included were measures of treatment outcome from the patients' perspective. To this end, patients in this evaluation demonstrated significant gains in quality of life, a construct that had as yet been untested in geropsychiatric in-patient populations. Averaged over time, ratings of life satisfaction changed from admission to discharge from "mostly dissatisfied" to "mostly satisfied". Insofar as these improvements concur with physician ratings of improvements in clinical and functional status, self-rated subjective quality of life may be regarded as a valid measure of how patients perceive their well-being. In this regard, these data may suggest that the multidisciplinary treatment provided on geropsychiatric in-patient units exercise a (likely joint) direct effect on subjective well-being. Alternately, the relationship between the provision of multidisciplinary treatments and quality of life may be more indirect, as patients' general sense of well-being improved as a function of their more specific functional and clinical improvements. That demented and non-demented patients experienced similar improvements in life satisfaction, despite greater clinical and functional gains in the non-demented group, would provide support to the direct impact hypothesis. However, additional studies that provide more detailed analyses of individual care plans are needed to identify the specific facets of hospitalization that are most likely to lead to improved quality of life before causal relationships may be inferred.

Counter to expectations, comparisons of life satisfaction ratings at discharge and follow-up indicated a significant regression from "mostly satisfied" to "mixed - equally satisfied and dissatisfied". Further, for demented patients this regression was quite substantial and reflected a quality of life rating that was comparable to that which they had expressed on admission. Counterintuitive quality of life findings at follow-up might simply reflect the fact that patients received more attention while in hospital which increased their sense of well-being and that as the attention dissipated following discharge, so too did their subjective quality of life. Alternately, as patients were discharged from hospital having experienced improvements in their mental status, awareness that their lives could be better may have evolved (Lehman et al., 1993) which may have negatively impacted on their feelings of general well-being, at least in the short term. Such possibilities form the basis for caution and more thoughtful consideration of how we might expect interventions to affect quality of life and suggests that longer term follow-ups are needed.

Finally, satisfaction ratings indicated that most patients were satisfied with the care that they received although some areas were identified for quality improvement. In particular, geropsychiatric in-patients expressed a desire to be more informed and more involved in their care plan. Counter to expectations, no group differences were found in ratings of satisfaction with treatment. This finding, in light of group differences in treatment response, may suggest that even patients with impaired insight may be able to distinguish between the quality of the care that they received and the efficacy of treatment. It may also suggest that demented and non-demented patients may have had different expectations for treatment from the outset. Measures of expectations on admission in future studies would address this latter possibility.

To sum, it appears that in-patient geropsychiatric units provide acceptable quality of care. Geropsychiatric hospitalization is also associated with clinically significant improvements and may, at least in the short term, enhance quality of life for elderly patients with psychiatric illnesses. Finally, evaluation findings suggest that even patients who are substantially impaired on admission and whose illness is typically irreversible, such as patients with dementia, while not able to achieve outcomes that are comparable to their non-demented counterparts, may nonetheless be expected to make statistically and clinically meaningful improvements. Insofar as the measures used in this evaluation provided meaningful comparisons across diagnostic groupings, results included herein may be more meaningful than those which have indicated low comparability across studies due to differing sampling strategies and relatively weak relationships when group differences have been examined (Bakey et al., 1987; Champagne et al., 1996; Kunik et al., 1996; Zubenko et al., 1994; Zubenko et al., 1992).

Despite significant and clinically meaningful treatment impacts, the naturalistic design that was used suggests that some caution must be taken in determining the strength of these findings. To begin, and as was alluded to earlier, ethical, practical, and methodological constraints did not allow for the use of a control group to assess the impact of several potential confounds, including the possibility that these patients might have improved without hospitalization. However, non-uniform improvements and a significant relationship between participation in treatment and treatment outcome provide support, in the absence of an experimental control group, for the efficacy of geropsychiatric hospitalization. Also potentially problematic was the use of raters who were also the treating physicians, which may have biased their ratings toward finding improvement. However, given that findings based on the use of a self-rated subjective quality of life tool generally concurred with findings based on physician ratings (i.e. both demonstrated significant improvements over the course of hospitalization), this bias was likely minimal. Finally, the naturalistic design used in this evaluation was intended to provide an assessment of the aggregate of somatic and other treatment modalities that constitute geriatric in-patient care in a tertiary care setting. As such, the relative contributions of the individual interventions cannot be determined from the present data. To this end, additional studies are needed to identify the specific outcomes, as assessed using the CGI-Improvement scale. The relationship between functioning on admission and treatment outcome has been reported using nonelderly acute care in-patients (Lieberman, McPhetres, Egeiter, & Witala, 1993) while social complications have been implicated in treatment outcome in a sample of mixed elderly and non-elderly patients (Lyons et al., 1995a). However, this is the first study to confirm that psychosocial functioning on admission is related to treatment outcome by virtue of its relationship to participation. This finding has great practical implication given that the measure of psychosocial functioning used in this evaluation, Axis V of DSM-IV (the GAF), is widely used across mental health facilities and, in Canada, is required by the Canadian Institute for Health Information (CIHI) for all patients admitted to a psychiatric hospital. As such, it is not only an effective, but also a very feasible predictor of expected outcomes.

While a significant inverse relationship between dementia status and outcome is consistent with Zubenko et al.'s (1994) findings that depressed patients with greater cognitive deficits experienced less favourable treatment outcomes, the expectation that dementia status would relate to treatment outcome by virtue of its impact on participation was not substantiated. This suggests that dementia status may exert a direct effect on treatment outcome, and that these patients might do better with some as-yet undetermined treatment regimen. To this end, additional studies are needed to increase our understanding of the mechanisms involved in these relationships so that appropriate strategies to reduce the morbidity of psychiatric illnesses in patients who suffer with dementia may be developed.

Counter to expectations, several patient characteristics failed to contribute significant unique variance to the prediction of treatment outcome. Severity of symptomatology was unrelated to treatment outcome. These findings are consistent with findings based on a depressed sample (Zubenko et al., 1994). Similarly, the indifference of risk of suicide and violence potential in predicting outcome is consistent with their lack of predictability of participation in treatment and in agreement with findings of other studies that have attempted to predict treatment outcome in the elderly (Lyons et al., 1995a; Zubenko et al., 1994).

In contrast, given that studies have linked outcome of geropsychiatric inpatient treatment to treatment resistance (Lyons et al., 1995a; Zubenko et al., 1994), medical burden (Zubenko et al., 1994) and activities of daily living on admission (Lyons et al., 1995a), their lack of significant unique contribution to the prediction of outcome in the present evaluation were somewhat perplexing. The approach used to assess treatment resistance in the present evaluation, highest level of functioning in the past year, was modelled after that used by Lyons et al. (1995a). Possibly other measures of premorbid functioning, such as whether the patient had received hospitalization for a similar problem in the past (Ashcraft et al., 1989) or number of medications on admission (Stoskopf & Horn, 1992) may have provided different results. Why activities of daily living did not add to the predictability of treatment outcome, despite its association to participation, is unclear. Possibly impairments in activities of daily living resulting from medical conditions and those resulting from psychiatric problems differentially impact on participation and subsequently outcome. Elucidation of these relationships will require that future studies identify the most probably cause of functional impairments. Finally, counterintuitive findings in terms of medical burden, in light of the general consensus of the importance of this variable in the literature (Alexopoulos, Young, Abrams, Meyers, & Shamoian, 1989; Baldwin & Jolley, 1986; Murphy, 1983; Zubenko et al., 1994) highlight the need for studies to further examine the mechanism by which this variable might impact on treatment.

To sum, in determining who might benefit the most from hospitalization, geropsychiatric in-patient units should consider whether a patient presents with dementia and assess the extent to which a patient is likely to be able to actively engage in treatment, a decision which should be derived based on consideration of a patient's level of functioning on admission. However, because the naturalistic design of this evaluation was not conducive to identifying what variables are most responsible for treatment outcome, it is more likely that several other as yet untested factors interact to determine outcome of geropsychiatric in-patient care. In this regard, additional studies should consider how patient characteristics interact with treatment related variables to optimize treatment efficacy.

Predicting length-of-stay. It was hypothesized that patient characteristics would jointly interact to predict length-of-stay. Indeed, 22% of the variability in length of stay was explained by eight patient characteristics. This is substantially higher than the 9% reported by Lyons et al. (1995a) whose data were based on a mixed sample of elderly and non-elderly patients. Greater predictability in the present evaluation may be attributed to the use of a more age homogeneous sample of patients and to the inclusion of predictors that were conceptually sound given the population under review.

Three predictors were identified as most relevant to the prediction of length-of-stay. To begin, patients with more disabling psychiatric disorders required longer length-of-stays. In this regard, findings concurred with those of Lyons et al. (1995a) as well as studies based on other psychiatric populations (see review by JPPC, 1995) by indicating that severity of psychopathology was the most influential predictor of length-of-stay. Indeed, in this evaluation, the PsychSentinel alone explained 10%, almost half, of the variability in length-of-stay. Similarly, the importance of considering self-care abilities was also noted by Lyons et al. (1995a), who reported a significant simple order relationship between self-care abilities and length-of-stay, and has been identified as an important predictor using non-elderly patients (Ashcraft et al., 1989). To this end, patients who presented with impaired activities of daily living required, on average, an additional 11.5 days of in-patient treatment. Finally, patients who lived alone on admission required on average an additional 11 days of treatment. Living alone on admission was selected as a proxy for discharge residence status based on the need, in a prospective funding system, for predictions to be based on data that are available on admission. Others have confirmed the potential of living alone in predicting length-of-stay in non-elderly samples (e.g. Taube, Sul Lee, & Forthofer, 1984), results of which have suggested that lacking support for aftercare at home may be associated with longer admissions. As services for aftercare, such as Home Care improve, this latter relationship might be expected to dissipate.

While studies comprised of mixed elderly and non-elderly patients (Lyons et al., 1995a) as well as studies based on non-elderly samples (e.g. Ashcraft et al., 1989; Essock-Vitale, 1985) have concluded that medical burden is positively correlated with length-of-stay, the findings of this evaluation did not support these conclusions. In fact, results indicated that higher levels of medical burden were (nonsignificantly) associated with shorter admission. These discrepant findings may reflect the greater medical frailty in elderly populations who, as medical problems worsen, are likely to require external medical attention that may lead to premature discharge. Similarly, contrary to what was expected based on studies that have reported shorter length-of-stays among demented geropsychiatric in-patients (Conwell et al., 1989; Draper, 1994; Snowdon, 1993), dementia status did not predict length-of-stay. This is consistent with studies based on non-elderly patients that have failed to document the importance of diagnosis in predicting resource use (see JPPC, 1995 for review). This also highlights, given that patients with dementia experienced less favourable improvements than their non-demented counterparts over the course of hospitalization, the need for clinical deliberation regarding the cost- effectiveness of treating demented and non-demented patients with similar length-of-stays.

As in the model designed to predict treatment outcome, premorbid functioning, risk of suicide, and violence potential did not contribute any unique variance to the predictive model. That risk of suicide and violence are not related to length-of-stay was also reported by Lyons et al. (1995a) in their sample of mixed elderly and non-elderly in-patients but is inconsistent with findings based on all non-elderly patients (Ashcraft et al., 1989; Lyons et al., 1995b; Munley et al., 1977; Schwab & Lahameyer, 1979). Similarly, Lyons et al. (1995a) failed to uncover significant predictive properties associated with premorbid functioning, which was used as a measure of treatment resistance, when analyses were based on their entire sample, despite the fact that studies based on non-elderly samples have concluded that patients who are more treatment resistant require longer length-of-stays (e.g. Stoskopf & Horn, 1992). Counterintuitive findings in these regards may highlight the distinctiveness of this and other elderly samples, in particular their low rates, in relation to their younger counterparts, of suicidal (Marzuk, Tardiff, Leon, Portera, & Weiner, 1997) and aggressive (Tardiff & Sweillam, 1980) behaviours, and the functional changes that occur with both normal aging (Crimmins & Saito, 1993; Myers, Holliday, & Harvey, 1993) and as a result of further deterioration caused by medical and/or psychiatric problems (Loewenstein, Rubert, & Berkowitz-Zimmer, 1992).

To sum, these findings suggest that predicting length-of-stay from data that are available on admission may be more feasible and useful than has previously been thought. However, the utility of a model that accounts for only 22% of the variability in length-of-stay may be limited. Indeed, because the naturalistic design of this evaluation does not permit us to say exactly what accounts for length-of-stay, evaluation reported higher mean total BAS scores (43.19 ± 11.94) than those which had previously been reported (32.2 ± 10.8) in a sample of caregivers of mostly severely mentally ill, young adult, male schizophrenics (Reinhard, 1994). The higher mean BAS scores noted in this evaluation provide confirmation of findings of other studies which have suggested that relatives of elderly mentally ill patients experience greater burden than caregivers of non-elderly patients (e.g. Grad & Sainsbury, 1963). Findings of this evaluation also suggested that caregivers of geropsychiatric in-patients experienced similar levels of distress surrounding issues that pertained to objective impacts of caring for a relative, such as difficulty concentrating, personal activity limitations, and disruptions in household routines, and issues of subjective burdens, such as worrying about what the future holds for one's relative, distress and feelings of loss as a result of the changes that they have witnessed in their relative, and feeling guilty for not doing enough to help.

Although it was hypothesized that caregivers of demented and non-demented patients would have different burden experiences, results did not support these expectations. Liptzin et al. (1988) also failed to find significant group differences when they compared a unidimensional measure of burden on admission in caregivers of demented and depressed patients. Anticipated high levels of subjective stress in caregivers of demented patients, most of whom resided in long-term care facilities, provides support to the contention that these caregivers experience high levels of stress associated with the cognitive and impending physical loss of their relative (Ronch, 1989) and that considerable stress, distress, and guilt are associated with placing a relative in a long-term care facility (Kinney & Stephens, 1989). Counterintuitive high levels of objective burden in caregivers of demented patients might suggest that, despite their relative being in a long-term care facility, these caregivers are very much involved in their relative's care. Moreover, their involvement with their relative might intensify prior to hospitalization, as nursing homes keep families abreast of disruptive behaviours that might lead to eventual hospitalization. Because the amount of and type of involvement that caregivers had with their relative was not assessed, this hypothesis requires further investigation.

Anticipated high levels of objective burden in caregivers of non-demented patients likely reflects the stress of the day to day responsibilities associated with caring for a non-institutionalized elderly relative with a mental disorder. Counterintuitive high levels of subjective burden on admission in caregivers of non-demented patients may reflect the fact that these patients complain more about some of their symptoms (Kahn, Zarit, Hilbert, & Niederehe, 1975; Kay, Beamish, & Roth, 1964) which may be emotionally taxing for their caregivers. Additional studies are needed to examine caregiver ratings of patient behaviours to test these possibilities.

Although findings in this evaluation were similar when only caregivers of demented patients who lived in long-term care facilities and caregivers of non-demented patients who lived in the community were considered, additional studies using larger sample sizes are needed to examine more closely the interactive effects of residence type and patient dementia status on caregiver burden. Further, although the amount of burden experienced by caregivers of demented and non-demented appears to be similar, this evaluation did not assess whether the distress associated with the burden was similar. Additional studies are also needed to address this question.

Impact of geropsychiatric in-patient treatment on caregiver burden. As expected, caregivers experienced significant reductions in overall, subjective, and objective burden following the hospitalization and discharge of their patient relative. These findings are suggestive of more positive outcomes for caregivers than those reported by Liptzin et al. (1988). Differences in measures, in particular the use of a measure of burden in the present evaluation that tapped into both objective and subjective burden may explain these conflicting findings. Using measures that tap into objective and subjective stresses may be particularly relevant when assessing the impacts of caring for frail elderly patients who present with multiple medical and psychiatric problems that may require high level of care assistance. Another difference in these two studies may be the priorities with which the treatment programs provided psychoeducation and support to caregivers. Indeed, a priority of the ROH is to provide psychoeducation to caregivers to prevent future relapses. Thus, given appropriate emphasis on caregiver needs, this evaluation suggests that it is reasonable to expect burden to improve following hospitalization of an elderly mentally ill relative.

Findings of this evaluation further suggested that the changes in caregiver burden following a relative's hospitalization were not as great for caregivers of demented, as opposed to non-demented patients, findings which persisted even after controlling for degree of clinical improvement. Specifically, caregivers of non-demented patients experienced improvements in both objective and subjective burden from their relative's admission to follow-up. Generalized improvements are not surprising, in hindsight, given that caregivers of non-demented patients did not express significant differences in their experiences of objective or subjective burden on admission. However, given similarities in ratings of objective and subjective burden on admission in caregivers of demented patients, the finding that they experienced significant improvements in subjective stressors only is perplexing. Possibly these counterintuitive findings reflect the fact that most demented patients resided in long-term care facilities and that caregivers maintained a similar level of involvement with their demented relative before and after hospitalization (objective burden). However, although this involvement may remain high, the worry, guilt, and other subjective distress associated with caregiving appeared to be less distressing following the patients' hospitalization. This may suggest that family interventions, including the provision of professional support, during the hospitalization may have helped the process of grieving the loss of the impaired relative and may have assisted in the resolution of any remaining uncertainty or guilt associated with placing a relative in a long-term care facility (Liptzin et al., 1988). Indications that caregivers of demented patients may not achieve as favourable outcomes in terms of objective burden suggests that interventions targeted toward reducing objective burden in this group need to be better developed and evaluated.

To sum, results of this evaluation suggest that caregivers do, in fact, experience reductions in burden following the hospitalization of their elderly psychiatrically ill relative. However, the naturalistic design of this evaluation requires that statements regarding the impact of hospitalization on caregiver burden be tempered. Nonetheless, the patterns of burden improvement in this evaluation were not uniform, that is, not all caregivers expressed similar rates of improvement, offering some support for the relationship between patient hospitalization and changes in caregiver burden (as opposed to mere regression to the mean). However, clearly it would be desirable to replicate these findings within a design that offers greater experimental control.

Predictors of change in caregiver burden. It was hypothesized, based on Liptzin et al.'s (1988) speculations, that caregivers of demented patients would perceive that they had received greater professional support from staff than caregivers of non-demented patients. Results of this evaluation did not support these expectations. In hindsight, however, given that caregivers of demented and non-demented patients experienced similar types and intensities of burden on admission, group differences in the perception of the supports that they received might not be expected. Moreover, although the results failed to confirm the hypothesized relationship between professional support and change in burden using global measures of these constructs, additional analyses indicated that professional support selectively reduced burden. That is, specific kinds of emotive professional support appeared to be helpful in reducing both objective and subjective burden.

That affective types of support reduced subjective burden is intuitively appealing. However, nonsignificant predictions of changes in subjective burden in this evaluation and in a study by Reinhard (1994) suggest that additional caregiver, patient, and/or treatment characteristics may need to be considered in order to better understand conditions under which caregiver subjective burden associated with caring for an elderly mentally ill relative may be reduced.

Findings which indicated that affective supports were more important than instrumental types of support in determining improvement in objective burden is inconsistent with what we had been hypothesized. However, consideration of the specific types of affective supports that were most predictive of objective burden, including a nonblaming attitude and encouragement for caregivers to spend more time engaged in non-caring aspects of one's life, may suggest that caregivers began to feel better about engaging in activities other than caring for their relative, which intuitively may be expected to reduce objective burden. Similarly, encouragement to be involved in decisions regarding the patients' treatment plan may have increased caregivers' confidence in their relative's treatment plan such that they began feeling more comfortable disengaging from the process of caregiving. That is, they began to "let go".

Why the provision of instrumental supports was not significantly associated with reductions in caregiver objective burden is unclear. Perhaps caregivers were well armed with practical knowledge and information on admission such that the provision of these types of support did not influence subsequent reductions in objective burden. This highlights the potential distinction between perceived support and the actual provision of support, a distinction that should be deliberated in future studies. Alternatively, a relationship between changes in objective caregiver burden and instrumental support may have been evident immediately following discharge, but these relationships dissipated during the month following discharge, as caregivers drifted back into their old lifestyles of caregiving. Studies will need to include measures of caregiver burden at discharge to test this possibility.

To sum, these findings suggest that although changes in caregiver burden are most closely associated with the provision of emotive supports, additional, as yet untested patient and caregiver characteristics likely interact to effect change in caregiver burden. Future studies should examine, for example, whether kin relation interacts with the patients' diagnosis to impact on change in caregiver burden. Alternatively, studies may consider more closely the dynamics of the caregiver-patient relationship by assessing the level of attachment both before and after hospitalization. The examination of these and other more complex relationships will require larger sample sizes than that which was used in the present evaluation and should provide longer follow-ups to explore families' changing needs and readiness for specific kinds of support as they strive to cope with the challenges of caring for their elderly mentally ill relative.

Chapter 11. CONCLUSIONS AND RECOMMENDATIONS

"As providers of (mental health) care learn more about what treatments work for which patients under naturalistic conditions (i.e. noncontrolled patient populations and nonrandomized clinical interventions), research moves from the domain of clinical trials to clinical mental health service research" (Sederer, Hermann, & Dickey, 1995, p. 131). In this regard, geropsychiatric in-patient units offer distinctive challenges for evaluation research because of the multiple domains affected by their patients' psychiatric problems.

This thesis represents a pioneering attempt at a full scale, multidimensional approach to the evaluation of a geropsychiatric in-patient unit. A comprehensive review of the program under study and a detailed analysis of patient characteristics served to identify the clinical needs of geropsychiatric in-patients and to highlight the current and projected burdens under which treatment is provided. Assessments of treatment impacts served to highlight the differences in outcomes between demented and non-demented patients and to bring into focus the discrepant changes in burden experiences between caregivers as a function of patients' dementia status. As the rate of dementia is expected to continue to increase over the next 30 years, so too might geropsychiatric in-patient units expect to treat greater proportions of patients with cognitive deficits. As a result, and in the absence of effective treatments and care plans to address the cognitive deficits in patients with dementia, outcomes of geropsychiatric in-patient hospitalization may be expected to deteriorate in proportion to the increase in the numbers of demented patients who are admitted.

Based on findings of this evaluation, several recommendations are offered to geropsychiatric in-patient units, in general, and the ROH Geriatric Psychiatry in-Patient Unit, in particular. To begin, results of this evaluation confirmed that there is an increasing demented population of elderly who are presenting with characteristics and behaviours (e.g. greater functional needs, aggressive behaviours) that are distinct from non-elderly patients. Moreover, findings reflected that demented patients who are treated with similar length-of-stays and receive similar treatment opportunities may not achieve the same level of generalized improvement as non-demented patients. Based on these findings, the following are proposed:

- given expectations that the distinct behaviours and needs of demented patients are more resource demanding, geropsychiatric in-patient resource needs for this growing population should be acknowledged and optimal distributions of resources established;
- clinicians should deliberate the cost-effectiveness of treating the more treatment resistant demented patients using length-of-stays that are similar to those used to treat other more remediable non-demented illnesses;
- program activities should be carefully deliberated to ensure that the specific needs of demented patients are, and will continue to be, sufficiently addressed (e.g. habit retraining, reality orientation

groups). To this end, and given the distinctiveness of the demented population, results of this evaluation support segregated treatment of demented and non-demented patients.

Findings of this evaluation also indicated that patients, although generally satisfied with treatment, expressed some areas for quality improvement. Because satisfied patients are more willing to participate in and comply with treatment regimes (Lebow, 1982; Ricketts & Kirshbaum, 1994), information generated in this evaluation should serve as a basis for quality improvement measures designed to enhance patient satisfaction. To this end, it is recommended that:

- programs strive to adopt treatment models wherein patients are viewed as active participants capable of making informed decisions. Informing patients of their treatment options, including anticipated impacts, and engaging patients to adopt a more active role in decision making are steps that may be taken to this end.

Based on outcomes of the general geropsychiatric in-patient population which reflected that most patients are discharged with residual symptoms and that, after discharge, quality of life may be compromised, the following are proposed:

- that close examination of residual symptoms be undertaken to determine, clinically, whether programs need to be modified to address those symptoms that might reasonably be expected to have resolved but that did not;
- that supports for patients in the form of follow-up care, e.g. Home

Care, be enhanced to maintain the gains that were made in hospital.

Findings of this evaluation suggested that the economically and politically motivated needs to identify elderly psychiatric patient for whom hospitalization is most likely to be beneficial and to predict resource use require further consideration. Nonetheless, based on the findings, the following may be proposed:

- in making determinations of which patients might be expected to achieve good benefits from hospitalization, a decision that might impact on admission suitability, care planning, and length-of-stay, clinicians should consider that non-demented patients who function well psychosocially on admission achieve the greatest gains;
- geropsychiatric in-patient units should modify their care plan to better suit the needs of those patients who were found to respond less favourably to treatment, i.e. patients with dementia and patients whose level of psychosocial dysfunction prohibits their active participation in treatment;
- in making estimates of length-of-stay for the purposes of greater efficiency in care planning, clinicians should consider that patients who live alone, are functionally impaired, and present as very severely ill on admission require longer length-of-stay.

In addition, findings reflected that caregiver burden, although generally reduced following hospitalization for caregivers of non-demented patients, remains elevated in caregivers of demented patients. Based on these findings, the following are proposed:

- caregiver needs should continue to be addressed through formal and informal interventions with particular attention paid to needs of caregivers of demented patients;
- because needs of caregivers are likely to be similar irrespective of their relatives' diagnosis, interventions aimed at reducing caregiver burden should be analogous for caregivers of demented and non-demented patients;
- an atmosphere of support, shared decision making, and encouragement to engage in non-caregiving activities will be most conducive to helping caregivers manage their burden.

Finally, given pressures for accountability within a rapidly changing mental health care system, it is imperative that geropsychiatric in-patient programs, in fact all mental health programs, adopt measures to provide ongoing monitoring of treatment impacts over time to ensure that patient needs continue to be adequately represented and effectively met. The ultimate goal of these endeavours should be increased efficiency, efficacy, and quality of care. Indeed, to paraphrase a leader of the Continuous Quality Improvement movement (Berwick, 1990), the true test of our commitment to improving mental health care will not be in our willingness to learn new techniques and new methods; it will be in our willingness to make and test actual changes in our real work, and then act based on what we have learned.

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APPENDIX A. FORCES BEHIND PROSPECTIVE FUNDING

As reviewed by the Joint Policy and Planning Committee (JPPC; 1995)[44], the trend toward prospective funding was initiated in the Unites States in response to the rapid escalation of hospital in-patient costs and the projected bankruptcy of Medicare by the late 1980s unless strong cost-containment measures were enacted. The measures that were enacted involved a radical departure from cost-based reimbursement methods of the past and ushered in the prospective payment of the future. Similar attempts have been initiated in Canada in response to a need to contain the rapidly escalating cost of health care. In Ontario measures to this end began in 1988 with the Transitional Funding initiative which was designed to encourage the cost-effective delivery of patient care, to improve funding equity across hospitals, and to introduce flexibility into the hospital funding formulae. These were to be achieved by "developing a methodology to establish a methodology (prospective funding system) to establish and maintain a balance between funding levels and hospital workloads on the basis of patient case mix groupings (JPPC, 1995, P. 1).

Prospective funding systems are based on patient classification systems that reliably organize patients into groups based on clinical similarities (case mix) and resources consumed (i.e. cost of care) during their hospital admission (Newman & McGovern, 1987). Within the general medical community, one of the earliest case

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[44] This review is based on that provided by the JPPC, 1995.

mix systems, Diagnosis Related Groups (DRGs) (Fetter, Shin, & Freeman, 1989) was based on a number of factors, including primary and secondary ICD-9-CM diagnosis (International Classification of Diseases, 1993), surgical procedures, and age. Because DRGs were "assumed to be able to predict the quantity of hospital resources likely to be consumed in an average hospital stay, they became a key component in the Prospective Payment System used by Medicare for (general) hospital reimbursements (in the US)" (JPPC, 1995, p. 2). In Ontario, the Hospital Medical Records Institute (now known as the Canadian Institute of Health Information) developed a "method of classifying general hospital cases that modified the US based DRG system to consider the different discharge diagnosis codings used in Canada" (JPPC, 1995, p. 2) (the American system codes diagnoses according to the five digit ICD-9-CM while in Canada the four digit ICD-9 system is used). The diagnosis most responsible for hospitalization was used to "assign cases to a Major Clinical Category, which was associated with either a major body systems (e.g. circulatory) or a particular treatment group (e.g. HIV infections)" (JPPC, 1995, p. 2). Within these Major Clinical Categories, "cases were grouped either under a surgical or medical hierarchy into a classification system known as Case Mix Groups (CMG™[45])" (JPPC, 1995, p. 2-3). CMG™ s in Ontario have become a "key vehicle for implementing the principle that hospitals treating comparable patients should receive comparable resources (JPPC, 1995,

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[45] Case Mix Groups of CMGs is a trade mark of the Canadian Institute for Health Information (CIHI).

p. 3). To this end, although this system is not yet prospective in nature, budget adjustments are based on a "hospital's acute in-patient cost per weighted case compared to its peer hospitals" (JPPC, 1995, p. 3). Weightings are derived from assigning resource intensities to all hospital cases according to their case mix groupings.

While the standard in general medical practice, the performance of DRGs and CMG™s in psychiatry have not been very useful. In fact, due to a combination of factors, including extreme diversity of psychiatric facilities and treatment approaches (US Report to Congress, 1987), difficulties of imprecise diagnoses (Tischler, 1987), and lack of homogeneity in psychiatric patients (Stoskopf & Horn, 1991), psychiatry diagnosis based groupings have been found to account for only between 3-14% of the variation in resource use, typically operationalized by length-of-stay (English, Sharfstein, Scherl, Astrachan, & Muszynski, 1986; Frank & Lave, 1985; McFarland, Faulkner, & Bloom, 1990; Stoskopf & Horn, 1992; Taube et al., 1984). Further, the inclusion of psychiatric facilities into Medicare's current prospective payment system was feared to "adversely affect hospital practice, patient help-seeking behaviour, and patient care (JPPC, 1995, p. 4). For example, Essock and Norquist (1988) have argued that if the groups created by patient classification systems were not relatively homogeneous regarding resource use, hospitals may alter their normal practice by discharging patients early or decreasing provisions of services. Alternatively, hospitals may selectively recruit patients with uncomplicated problems or may be tempted to manipulate the system by assigning a patient a discharge diagnosis category which provides the hospital with greater financial return (English et al., 1986; Essock et al., 1988). In response to these concerns, many psychiatric facilities have been exempted from Medicare's prospective payment system in the US and the use of CMG™s have not been used for psychiatric facilities in Ontario.

APPENDIX B. PATIENT LETTER AND CONSENT FORM

GERIATRIC IN-PATIENT EVALUATION PROJECT

Patient letter

The Royal Ottawa Hospital is involved in an ongoing study designed to help us improve the services we offer our clients. We are currently assessing the overall well being of our patients both before and after treatment. We are also interested in obtaining feedback regarding how satisfied you are with the services that you received.

Participation in this evaluation means that you will allow us to use clinical and demographic information, provided by your nurse, physician, and your chart, to determine the extent to which the treatment that was provided to you at the ROH has helped you.

Participation in this project is completely voluntary. All information obtained will be used for research purposes only and will be held in the strictest confidence. If you decide to participate, we will respect your rights of confidentiality of information. At the end of the study, a report will be prepared from the collected information. In addition, the information will be kept and may be used in future evaluation projects. However, for all purposes to which the information is to be used, only group information will be used. Identifiable individual examples will never be included.

If you choose not to take part in this study, the future care and services you receive from the Royal Ottawa Hospital will not be influenced in any way.

If you have any questions about this project, please feel free to contact Donna Lockett at 247-0145. Please indicate your consent to participate by reading and signing the attached consent form.

ROYAL OTTAWA HOSPITAL
HÔPITAL ROYAL OTTAWA
A division of the Royal Ottawa Health Care Group / Une division des services de santé Royal Ottawa

GERIATRIC IN-PATIENT EVALUATION
PATIENT INFORMED CONSENT

I understand that the purpose of this study is to evaluate the Royal Ottawa Hospital Geriatric In-Patient Unit and that my nurse and physician will be providing information related to my illness for this evaluation and that information may also be obtained from my chart.

I understand that my participation in this evaluation project is voluntary and that I may choose not to participate in the study without an effect on future services provided to me by the Royal Ottawa Hospital. I also understand that all information is to be used for evaluative purposes only and that I will not be identified in any use to which the information may be put.

I agree to participate in this evaluation project.

Name______________________________

Signature__________________________

Date______________________________

PROJET D'ÉVALUATION DES PATIENTS HOSPITALISÉS EN GÉRIATRIE

Lettre aux patients

L'Hôpital Royal Ottawa étudie actuellement la manière d'améliorer les services que nous offrons aux clients. Nous évaluons présentement le bien-être général de nos patients avant et après le traitement. Nous aimerions aussi obtenir des commentaires sur votre degré de satisfaction à l'égard des services reçus.

Participer à cette évaluation signifie que vous nous permettez d'utiliser les informations cliniques et démographiques fournies par votre infirmière, par votre médecin et figurant à votre dossier, afin de déterminer dans quelle mesure le traitement qui vous a été fourni à l'HRO vous a aidé.

La participation à ce projet est entièrement volontaire. Toutes les informations obtenues seront utilisées pour les besoins de la recherche seulement et ceci en toute confidence. Si vous décidez d'y participer, nous respecterons votre droit à la confidentialité des informations. À la fin du projet de recherche, un rapport sera préparé à partir des informations collectées. De plus, les informations seront conservées et pourraient être utilisées dans le cadre de projet futurs d'évaluation. Cependant, seules les informations de groupe seront utilisées pour les objectifs visés. Des exemples de participants individuels ne seront jamais donnés.

Si vous décidez de ne pas participer à ce projet de recherche, les soins et services que vous recevrez à l'avenir à l'Hôpital Royal Ottawa ne seront aucunement affectés.

Si vous avez des questions à poser sur ce projet, n'hésitez pas à contacter Donna Lockett, au 247-0145. Veuillez indiquer votre consentement à y participer en lisant et en signant le formulaire de consentement ci-joint.

ROYAL OTTAWA HOSPITAL
HÔPITAL ROYAL OTTAWA
A division of the Royal Ottawa Health Care Group / Une division des services de santé Royal Ottawa

PROJET D'ÉVALUATION DES PATIENTS HOSPITALISÉS EN GÉRIATRIE - CONSENTEMENT ÉCLAIRÉ DU PATIENT

Je comprends que l'objectif de ce projet de recherche est d'évaluer l'Unité de patients hospitalisés en gériatrie de l'Hôpital Royal Ottawa.

Je comprends que mon infirmière et mon médecin vont fournir des informations sur ma maladie pour cette évaluation, et que des informations pourraient aussi être obtenues de mon dossier.

Je comprends que ma participation à ce projet d'évaluation est volontaire et que je peux choisir de me retirer du projet sans pour autant porter préjudice aux services qui me seront fournis par la suite à l'Hôpital Royal Ottawa. Je comprends aussi que toutes les informations seront utilisées pour les besoins de l'évaluation seulement et que l'on ne pourra pas m'identifier dans le cadre de l'utilisation de ces informations.

J'accepte de participer à ce projet d'évaluation.

Nom: ______________________________

Signature: __________________________

Date: ______________________________

1145 CARLING • OTTAWA • ONTARIO • K1Z 7K4 • (613) 722-6521

APPENDIX C. PATIENT OUTCOME EVALUATION MEASURES:

Physician ratings:

CGI Scales

PsychSentinel symptom scale

Global Assessment of Functioning Scale

WHO DAS-S ADL and Social Functioning scales

Global Life Satisfaction scale

Treatment Satisfaction scale

Nurse ratings at discharge

CLINICIAN RATINGS - ADMISSION & FOLLOW-UP

Patient:__________________Chart#:_________________Date(m/d/y):________

Clinical variable	Options	Descriptives	Rating
Clinical Global Impression - Severity (of illness at time of admission)	1	▪ Normal, not at all ill	Rating (1-7, 99): ______
	2	▪ Borderline mentally ill	
	3	▪ Mildly ill	
	4	▪ Moderately ill	
	5	▪ Markedly ill	
	6	▪ Severely ill	
	7	▪ Among the most extremely ill	
	99	▪ Not assessed/Unknown/Undeterminable	

Current GAF___________

WHO DAS-S: Rate the patient's level of functioning for each of the areas below using the following scale:

0= no disability at any time
1= minimal disability in patient's performance of one or more of the tasks/roles
2= slightly disabled most of the time or moderately disabled some of the time
3= disabled in most of his/her expected tasks and roles
4= disabled in all of his/her expected tasks and roles
5= gross disability, severely disabled all of the time

_____**Activities of daily living** (personal hygiene, dressing, feeding, cleaning up after self, etc.)

_____**Social roles** (performance in relation to others, participation in leisure/social activities)

CLINICIAN RATINGS - DISCHARGE

Patient:________________Chart#:______________Date(m/d/y):_________

Clinical variable	Options	Descriptives	Rating
Clinical Global Impression - Severity (of illness at time of discharge)	1	■ Normal, not at all ill	**Rating** (1-7, 99): ______
	2	■ Borderline mentally ill	
	3	■ Mildly ill	
	4	■ Moderately ill	
	5	■ Markedly ill	
	6	■ Severely ill	
	7	■ Among the most extremely ill	
	99	■ Not assessed/Unknown/Undeterminable	
Clinical Global Impression - Improvement (of illness at this time)	1	■ Very much improved	**Rating** (1-7, 99): ______
	2	■ Much improved	
	3	■ Minimally improved	
	4	■ No change	
	5	■ Minimally worse	
	6	■ Much worse	
	7	■ Very much worse	
	99	■ Not assessed/Unknown/Undeterminable	

Current GAF__________

WHO DAS-S: Rate the patient's level of functioning for each of the areas below using the following scale:

0= no disability at any time
1= minimal disability in patient's performance of one or more of the tasks/roles
2= slightly disabled most of the time or moderately disabled some of the time
3= disabled in most of his/her expected tasks and roles
4= disabled in all of his/her expected tasks and roles
5= gross disability, severely disabled all of the time

_____**Activities of daily living** (personal hygiene, dressing, feeding, cleaning up after self, etc.)
_____**Social roles** (performance in relation to others, participation in leisure/social activities)

PsychSentinel Instructions: For each syndrome that is present on admission, review the list of symptoms and identify, by circling the corresponding number to the left of the symptom, whether the individual symptom is "not present" or "present" on admission. Upon discharge, review the list of symptoms and indicate, by circling the corresponding number on the right side of the symptom, whether the symptom is "still a problem", "improved", or "not a problem" If more than one syndrome applies, check whether syndrome(s) is primary, secondary, or tertiary. Note: if a symptom is not present on admission but appears during the course of treatment and remains at discharge, it should be rated as "not present at admission" and rated appropriately at discharge. If the symptom was not present on admission, appeared during treatment, and was resolved prior to discharge, no rating is necessary.

ADMISSION:			DISCHARGE:		
Not present at admission	Present at admission		Still a problem	Improved	Not a problem

1. DEPRESSION

Diagnosis is: Primary___ Secondary___ Tertiary___

0	2	Depressed mood most of the time	2	1	0
0	2	Decreased interest/pleasure -most activities	2	1	0
0	1	A problem with appetite/weight change	1	0.5	0
0	1	Significant sleep disturbance	1	0.5	0
0	2	Psychomotor retardation or agitation	2	1	0
0	1	Fatigue, loss of energy	1	0.5	0
0	1	Feelings of worthlessness or guilt	1	0.5	0

Depression continued (Syndrome severity = total score x 4.35)

0	1	Poor concentration	1	0.5	0
0	4	Significant suicide risk	4	2	0
0	4	Delusions/hallucinations	4	2	0
0	1	Panic attacks	1	0.5	0
0	1	Depression worse in morning	1	0.5	0
0	1	Early awakening	1	0.5	0
0	1	Obsessional thinking, rumination	1	0.5	0

2. MANIA/BIPOLAR

Diagnosis is Primary___ Secondary___ Tertiary___

0	2	Expansive or irritable mood (persistent)	2	1	0
0	2	Grandiose, > self esteem	2	1	0
0	1	< Need for sleep	1	0.5	0
0	1	More talkative than usual	1	0.5	0
0	2	Flight of ideas, distractibility	2	1	0
0	1	Dysphoria	1	0.5	0

Mania/Bipolar continued (Syndrome severity = total score x 3.85)

0	2	Psychomotor agitation	2	1	0
0	1	Excessive high risk pleasurable activities	1	0.5	0
0	4	Impaired occupational functioning	4	2	0
0	2	Impaired in social activities	2	1	0
0	4	Delusions	4	2	0
0	4	Hallucinations	4	2	0

3. DYSTHYMIA

Diagnosis is Primary Secondary___ Tertiary_ _

0	4	Depressed mood most days	4	2	0
0	2	Irritability, excess anger	2	1	0
0	1	Guilt, brooding about the past	1	0.5	0
0	1	Loss of interest, pleasure	1	0.5	0
0	1	Fatigue or low energy	1	0.5	0

Dysthymia continued (Syndrome severity = total score x 5.26)

0	2	Low self-esteem	2	1	0
0	1	Poor concentration, indecisiveness	1	0.5	0
0	1	Social withdrawal	1	0.5	0
0	4	Hopelessness, pessimism, despair	4	2	0
0	2	Decreased activity, effectiveness	2	1	0

4. SCHIZOPHRENIA

Diagnosis is Primary Secondary_ _ Tertiary _

0	4	Delusions	4	2	0
0	4	Hallucinations	4	2	0
0	2	Loose associations/incoherence	2	1	0
0	2	Negative symptoms (flat affect, avolition)	2	1	0
0	2	Work, social, self-care functions impaired	2	1	0

Schizophrenia continued (Syndrome severity total score x [illegible])

0	2	Marked isolation or withdrawal	2	1	0
0	2	Peculiar behavior and/or grooming	2	1	0
0	2	Odd beliefs of magical thinking	2	1	0
0	2	Marked paranoia	2	1	0
0	1	Lack of initiative or energy	1	0.5	0

ADMISSION: DISCHARGE: ADMISSION: DISCHARGE:

5. SCHIZOAFFECTIVE

Diagnosis is: Primary___ Secondary___ Tertiary___

Not present at admission	Present at admission		Still a problem	Improved	Not a problem
0	4	Delusions/hallucinations	4	2	0
0	2	Loose associations/incoherence	2	1	0
0	2	Flat or inappropriate affect	2	1	0
0	2	Marked isolation or withdrawal	2	1	0
0	2	Depressed mood most of the day	2	1	0
0	1	Significant appetite/weight change	1	0.5	0
0	1	Significant sleep disturbance	1	0.5	0

Schizoaffective continued... (Syndrome severity = total score x 3 57)

Not present at admission	Present at admission		Still a problem	Improved	Not a problem
0	2	Psychomotor retardation or agitation	2	1	0
0	1	Feelings of worthlessness or guilt	1	0.5	0
0	4	Significant suicide risk	4	2	0
0	2	Expansive or irritable mood	2	1	0
0	2	Grandiose, > self-esteem	2	1	0
0	1	More talkative than usual	1	0.5	0
	2	Flight of ideas, racing thoughts	2	1	0

6. ORGANIC and/or (Affective /Psychotic NOS)

Diagnosis is: Primary___ Secondary___ Tertiary___

0	4	Delusions/hallucinations	4	2	0
0	2	Impaired long-term memory	2	1	0
0	2	Inability to learn new information	2	1	0
0	2	Depressed mood	2	1	0
0	2	Panic attacks	2	1	0
0	2	Generalized anxiety	2	1	0

Organic continued... (Syndrome severity = total score x 3 85)

0	2	Affective instability	2	1	0
0	2	Recurrent rageful outbursts	2	1	0
0	2	Poor impulse control	2	1	0
0	4	Apathy and indifference	4	2	0
0	1	Suspiciousness/paranoia	1	0.5	0
0	1	Suicidal ideation or attempt	1	0.5	0

7. ADJUSTMENT DISORDER

Diagnosis is: Primary___ Secondary___ Tertiary___

0	4	Unable to deal with major stressor	4	2	0
0	2	Impaired occupational functioning	2	1	0
0	2	Impaired social functioning	2	1	0
0	4	Excessive reaction to stressor	4	2	0
0	4	Depressed mood	4	2	0
0	4	Hopelessness	4	2	0

(Syndrome severity = total score x 2 94)
Adjustment disorder continued

0	2	Nervousness, worry	2	1	0
0	2	Increased dependency	2	1	0
0	4	Violation of the rights of others	4	2	0
0	2	Inability to work or study	2	1	0
0	4	Social withdrawal	4	2	0

8. PERSONALITY (mixed)

Diagnosis is: Primary___ Secondary___ Tertiary___

0	2	Perfectionism	2	1	0
0	2	Inflexible, rigid, stubborn	2	1	0
0	2	Overly dramatic, reactive	2	1	0
0	2	Hypersensitive to rejection	2	1	0
0	2	Grandiose sense of self-importance	2	1	0
0	2	Violation of the rights of others	2	1	0
0	2	Antisocial (arrests, assaults, lying, etc)	2	1	0

Personality continued (Syndrome severity = total score x 1 57)

0	2	Suspiciousness, paranoia, mistrust	2	1	0
0	2	Odd beliefs, thinking, and speech	2	1	0
0	2	No close friends or confidants	2	1	0
0	2	Social anxiety or avoidance	2	1	0
0	2	Constantly seeks advise, reassurance	2	1	0
0	2	Defers to others, no self-confidence	2	1	0
0	2	Impaired functioning	2	1	0

9. BORDERLINE PERSONALITY

Diagnosis is: Primary___ Secondary___ Tertiary___

0	2	Unstable, intense relationships	2	1	0
0	2	Non-suicidal impulsivity	2	1	0
0	2	Affective instability	2	1	0
0	2	Intense anger or anger dyscontrol	2	1	0
0	2	Recurrent suicidal threats/gestures	2	1	0

Borderline continued (Syndrome severity = total score x [illegible])

0	2	Identity disturbance	2	1	0
0	2	Chronic emptiness, boredom	2	1	0
0	2	Frantic avoidance of abandonment	2	1	0
0	2	Transient, stress-related psychosis	2	1	0
0	2	Self-mutilating behavior	2	1	0

ADMISSION: DISCHARGE: | ADMISSION: DISCHARGE:

10. EATING DISORDER

Diagnosis is: Primary___ Secondary___ Tertiary___

Not present at admission	Present at admission		Still a problem	Improved	Not a problem
0	4	Intense fear of becoming obese	4	2	0
0	2	Disturbance in perception of body image	2	1	0
0	4	Refusal to maintain body weight	4	2	0
0	4	Self-induced vomiting	4	2	0

Eating disorder continued (Syndrome severity = total score x 4.55)

Not present at admission	Present at admission		Still a problem	Improved	Not a problem
0	2	Binge eating	2	1	0
0	2	Use of diuretics	2	1	0
0	2	Self-deprecating thoughts	2	1	0
0	2	Repeated eating of non-nutritive substance	2	1	0

11. DEMENTIA, DELUSIONAL

Diagnosis is: Primary___ Secondary___ Tertiary___

Not present at admission	Present at admission		Still a problem	Improved	Not a problem
0	4	Significant loss of intellectual abilities	4	2	0
0	4	Memory impairment	4	2	0
0	4	Impairment of abstract thinking	4	2	0
0	4	Impaired judgement	4	2	0
0	2	Personality changes	2	1	0
0	2	Persecutory delusions	2	1	0

Dementia / delusional continued (Syndrome severity = total score x 2.63)

Not present at admission	Present at admission		Still a problem	Improved	Not a problem
0	2	Aggressiveness/hostility	2	1	0
0	2	Anxiety	2	1	0
0	4	Psychomotor agitation	4	2	0
0	4	Prominent delusions	4	2	0
0	4	Depersonalization	4	2	0
0	2	Emotional lability	2	1	0

12. PANIC DISORDER

Diagnosis is: Primary___ Secondary___ Tertiary___

Not present at admission	Present at admission		Still a problem	Improved	Not a problem
0	2	Major PAs (>4 sx)	2	1	0
0	1	Limited symptom PAs (<4 sx)	1	0.5	0
0	4	Housebound	4	2	0
0	2	Moderate agoraphobia	2	1	0
0	3	Hypochondriasis/ER visits	3	1.5	0
0	2	Worry regarding PAs	2	1	0

Panic disorder continued (Syndrome severity = total score x 4.55)

Not present at admission	Present at admission		Still a problem	Improved	Not a problem
0	2	Generalized anxiety	2	1	0
0	1	Depressed mood	1	0.5	0
0	1	Insomnia	1	0.5	0
0	2	Interference with function	2	1	0
0	2	Fear of going crazy	2	1	0

13. OBSESSIVE COMPULSIVE DISORDER

Diagnosis is: Primary___ Secondary___ Tertiary___

Not present at admission	Present at admission		Still a problem	Improved	Not a problem
0	2	Obsessions	2	1	0
0	2	Compulsions	2	1	0
0	2	Loss of time (> 1h/day)	2	1	0
0	2	Interference with activities	2	1	0

(Syndrome severity = total score x 7.14)

Obsessive compulsive disorder continued

Not present at admission	Present at admission		Still a problem	Improved	Not a problem
0	2	Little control (can rarely stop)	2	1	0
0	2	Little effort to resist	2	1	0
0	2	Associated severe distress	2	1	0

14. POST-TRAUMATIC STRESS DISORDER

Diagnosis is: Primary___ Secondary___ Tertiary___

Not present at admission	Present at admission		Still a problem	Improved	Not a problem
0	2	Intense recollections of trauma (any form)	2	1	0
0	2	Intense distress at cues of trauma	2	1	0
0	2	Decreased interest in activities	2	1	0
0	2	Detachment/estrangement from others	2	1	0
0	1	Restriction of affect	1	0.5	0
0	1	Sense of foreshortened future	1	0.5	0

[illegible]

Post-traumatic stress disorder continued

Not present at admission	Present at admission		Still a problem	Improved	Not a problem
0	2	Partial amnesia for trauma	2	1	0
0	2	Avoidance of reminders of trauma	2	1	0
0	1	Insomnia	1	0.5	0
0	1	Irritability	1	0.5	0
0	1	Increased startle response	1	0.5	0
0	1	Difficulty concentrating	1	0.5	0

LIFE SATISFACTION SCALE

***Instructions to be given to patient*:**

"Please look at this scale. This scale goes from terrible, which is the lowest ranking of 1, to delighted, which is the highest ranking of 7. There are also points 2 through 6 with descriptions below them. Feel free to respond with a number or the descriptor. Using this scale, please answer the following question":

On a scale from 1 (terrible) to 7 (delighted).....

HOW DO YOU FEEL ABOUT YOUR LIFE AS A WHOLE?

①	②	③	④	⑤	⑥	⑦
Terrible	**Unhappy**	**Mostly Dissatisfied**	**Mixed** (equally satisfied and dissatisfied)	**Mostly Satisfied**	**Pleased**	**Delighted**

If completed: Date completed (m/d/y) _______________

Administered/Attempted by: _______________

If not completed: Reason:

: Unable to respond _____
: Refused to respond _____
: Discharged unexpectedly _____

ROYAL OTTAWA HOSPITAL

PATIENT SATISFACTION QUESTIONNAIRE

The Royal Ottawa Hospital values the well being, care and comfort of our clients. We would like to know how you feel about your treatment and our hospital services.

Please help us by taking a few minutes to complete this questionnaire. Simply circle the response which most closely describes how you feel. We would also encourage you to provide comments and/or suggestions on how we can improve our services.

We assure you that your responses and comments will be kept confidential and that they will not, in any way, adversely affect the care that you receive now or in the future.

Thank you for taking the time to help us to learn how we can better serve you.

WE CARE WHAT YOU THINK!

Name________________________________ Date(m/d/y)__________

Please rate the degree to which you agree with the following: (circle your answer)

	Strongly Disagree	Disagree	Agree	Strongly Agree
1. You felt safe while in the hospital	1	2	3	4
2. Staff were supportive of your needs	1	2	3	4
3. You felt involved in the decisions regarding your treatment	1	2	3	4
4. You were treated with respect	1	2	3	4
5. Staff helped you to come to a better understanding of your illness	1	2	3	4
6. Staff appeared to be knowledgeable	1	2	3	4
7. Your symptoms were reduced following the treatment you received	1	2	3	4
8. Staff explained your treatment options to you	1	2	3	4
9. Staff made it clear what you could expect from your treatment	1	2	3	4

PLEASE TURN OVER ....

10. Did you get the kind of treatment you wanted?

1	2	3	4
No, definitely not	**No, not really**	**Yes, generally**	**Yes, definitely**

- -

11. To what extent has our hospital met your needs?

1	2	3	4
No needs have been met	**Only a few needs have been met**	**Most needs have been met**	**All needs have been met**

- -

12. If a friend were in need of similar help, would you recommend this hospital to him or her?

1	2	3	4
No, definitely not	**No, not really**	**Yes, generally**	**Yes, definitely**

- -

13. Has the treatment you received helped you to deal more effectively with your problems?

1	2	3	4
No, they seemed to make things	**No, they really didn't help**	**Yes, they helped somewhat**	**Yes, they helped a great deal**

- -

14. If you were to seek help again, would you come back to this hospital?

1	2	3	4
No, definitely not	**No, not really**	**Yes, generally**	**Yes, definitely**

- -

15. In an overall, general sense, how satisfied are you with the treatment you have received?

1	2	3	4
Quite dissatisfied	**Mildly dissatisfied**	**Mildly satisfied**	**Very satisfied**

- -

Comments or suggestions:

QUESTIONNAIRE SUR LA SATISFACTION

HÔPITAL ROYAL OTTAWA

Nom: ________________________ **Date(mois/jour/année)**____

Veuillez, s'il vous plaît, nous aider à améliorer nos programmes en répondant à des questions sur les services que vous avez reçus à l'Hôpital Royal Ottawa. Nous aimerions connaître votre opinion sincère, qu'elle soit négative ou positive.

Soyez assuré que vos réponses et commentaires seront utilisés pour les besoins de l'évaluation seulement et n'affecteront aucunement les soins que vous recevez maintenant ou recevrez à l'avenir. Vos réponses seront gardées confidentielles.

Répondez à toutes les questions. Nous aimerions aussi recevoir vos commentaires et suggestions. Merci de bien vouloir prendre le temps de remplir ce questionnaire qui nous aidera à mieux vous servir, et les autres patients, et à améliorer la prestation de nos services. Merci.

CE QUE VOUS PENSEZ EST IMPORTANT POUR NOUS!

Nom________________________________ Date(m/j/a)______

Veuillez indiquer quand quelle mesure vous êtes d'accord ou non avec ce qui suit (encerclez votre réponse).

	Pas du tout	Pas d'accord	D'accord	Fortement d'accord
1. Vous vous êtes senti en sécurité pendant votre hospitalisation	1	2	3	4
2. Le personnel vous a fourni un soutien	1	2	3	4
3. Vous avez eu l'impression de participer au processus de prise de décision	1	2	3	4
4. On vous a traité avec respect	1	2	3	4
5. Les membres du personnel vous ont aidé à mieux comprendre votre maladie	1	2	3	4
6. Les membres du personnel ont semblé avoir de bonnes connaissances	1	2	3	4
7. Vos symptômes ont diminué à la suite des soins que vous avez reçus	1	2	3	4
8. Le personnel vous a expliqué les options de traitement	1	2	3	4
9. Les membres du personnel ont expliqué clairement ce que vous pouvez attendre de votre traitement	1	2	3	4

VEUILLEZ VOIR AU VERSO...

10. Avez-vous obtenu le genre de service que vous désiriez?

1	2	3	4
non, défititivement pas	**non, pas vraiment**	**oui, en général**	**oui, définitivement**

11. Jusqu' à quel point l'Hôpital a-t-il répondu à vos besoins?

1	2	3	4
aucun de mes mes besoin ont été été satisfaits	**seulement quelques-uns ont été satisfaits**	**la plupart de mes besoins ont été satisfaits**	**presque tous besoins ont satisfaits**

12. Si un ou une ami(e) avait besoin d'une aide semblable, lui recommanderiez-vous l'Hôpital Royal d'Ottawa?

1	2	3	4
non, définitivement pas	**non, pas vraiment**	**oui, dans l'ensemble**	**oui, vraiment**

13. Est-ce-que les services que vous avez reçus vous ont aidé à mieux affronter vos difficultés?

1	2	3	4
non,mes difficultés se son aggravées	**non, ils ne m'ont pas vraiment aidé**	**oui, ils m'ont aidé un peu**	**oui, ils m'ont aidé beaucoup**

14. Si vous aviez encore besoin d'aide est-ce que vous reviendriez à l'Hôpital Royal d'Ottawa?

1	2	3	4
non, définitivement pas	**non, je ne pense pas**	**oui, je pense**	**oui, définitivement**

15. De façon générale et globale, quel est votre degré de satisfaction par rapport aux services reçus?

1	2	3	4
très insatisfait(e)	**indifférent(e) ou un peu insatisfait(e)**	**assez satisfait(e)**	**très satisfait**

Commentaires:

NURSE RATINGS AT DISCHARGE

Reason for discharge:

☐ 1 = Completed
☐ 2 = Drop-out
☐ 3 = Transferred to another unit
☐ 4 = Medical problem requiring outside treatment
☐ 5 = Death of patient
☐ 6 = Other________________
☐ 99 = Unknown

General level of participation in treatment:

☐ 1 = Very active
☐ 2 = Moderately active
☐ 3 = Resistant
☐ 4 = Refused treatment
☐ 5 = Unable to participate due to medical condition(s)
☐ 6 = Other________________
☐ 99 = Unknown

APPENDIX D. FAMILY LETTER AND CONSENT FORM

GERIATRIC INPATIENT EVALUATION PROJECT
FAMILY LETTER

The Royal Ottawa Hospital is involved in a study designed to help us improve the services we offer our clients. We are currently assessing what impact caring for a relative with a psychiatric illness has on caregivers, both before and after the ill relative has received treatment. We are also interested in obtaining feedback regarding how satisfied you are with the services that were provided to you.

Participation in this project is completely voluntary. All information obtained will be used for evaluation purposes only and will be held in the strictest confidence. If you decide to participate, we will respect your rights of confidentiality of information. At the end of the study, a report will be prepared from the collected information. In this report, only group information will be used. Identifiable individual examples will not be included.

If you choose not to take part in this study, the future care and services that you and your relative receive from the Royal Ottawa Hospital will not be influenced in any way.

Participation in this project will require completing a caregiver impact questionnaire at two points in time: when your relative is admitted and one month after discharge. This questionnaire takes approximately 5 minutes to complete. In addition, we would ask that you complete a satisfaction questionnaire when your loved one is discharge. The satisfaction questionnaire takes less than 5 minutes to complete.

If you have any questions about this project, please feel free to contact Donna Lockett at 247-0145.

ROYAL OTTAWA HOSPITAL
HÔPITAL ROYAL OTTAWA
A division of the Royal Ottawa Health Care Group / Une division des services de santé Royal Ottawa

GERIATRIC IN-PATIENT EVALUATION

FAMILY INFORMED CONSENT

I understand that the purpose of my completing these questionnaires is to allow the Royal Ottawa Hospital to evaluate their Geriatric In-Patient program. I understand that my responses will be kept confidential. I understand that the information to be provided in these questionnaires is freely volunteered by me with the expressed understanding that such information is to be used for evaluative purposes only and that I will not be identified in any use to which the information may be put. I understand that my participation in this evaluation project is voluntary and that I may choose not to participate without an effect on future services provided to me or my loved one by the Royal Ottawa Hospital.

I agree to participate in this evaluation project.

Name______________________________

Signature___________________________

Date_______________________________

1145 CARLING • OTTAWA • ONTARIO • K1Z 7K4 • (613) 722-6521

PROJET D'ÉVALUATION DES PATIENTS GÉRIATRIQUES HOSPITALISÉS - FAMILLE

L'Hôpital Royal Ottawa effectue une étude visant à l'aider à améliorer les services offerts à ses clients. Nous évaluons actuellement l'impact sur les soignants de la tâche de soigner un membre de la famille ayant une maladie psychiatrique, avant et après le traitement du patient. Nous aimerions aussi obtenir une rétro-information sur votre degré de satisfaction concernant les services que vous avez reçus.

La participation à ce projet est entièrement volontaire. Toutes les informations obtenues seront utilisées pour les besoins de la recherche seulement et seront conservées dans la plus grande confidence. Si vous décidez d'y participer, nous respecterons votre droit à la confidentialité des informations. À la fin de cette étude, un rapport sera préparé à partir des informations collectées. Dans ce rapport, on n'utilisera que des informations sur le groupe. On n'inclura pas d'exemples identifiables concernant des personnes individuelles.

Si vous choisissez de ne pas participer à ce projet de recherche, les soins que vous et le membre de votre famille recevrez de l'Hôpital Royal Ottawa n'en seront aucunement affectés.

La participation à ce projet consiste à remplir un bref questionnaire relatif à l'impact sur le soignant, à remplir à deux reprises: à l'admission du membre de votre famille et un mois après le congé. Ce questionnaire vous prendra environ 5 minutes à remplir. De plus, nous vous demandons de remplir un questionnaire sur la satisfaction, au moment du congé du membre de votre famille. Le questionnaire sur la satisfaction prend moins de 5 minutes à remplir.

Si vous avez des questions à poser sur ce projet, n'hésitez pas à contacter Donna Lockett au 247-0145. Avant de nous renvoyer le questionnaire ci-joint, veuillez lire et signer le formulaire de consentement.

ROYAL OTTAWA HOSPITAL
HÔPITAL ROYAL OTTAWA
A division of the Royal Ottawa Health Care Group / Une division des services de santé Royal Ottawa

ÉVALUATION DES PATIENTS GÉRIATRIQUES HOSPITALISÉS
CONSENTEMENT ÉCLAIRÉ DE LA FAMILLE

Je comprends que l'objectif de ces questionnaires est de permettre à l'Hôpital Royal Ottawa d'évaluer son programme pour patients gériatriques hospitalisés. Je comprends que mes réponses seront considérées comme entièrement confidentielles. Je comprends que je fournis librement les informations dans ces questionnaires, étant bien entendu qu'elles seront utilisées seulement pour les besoins de l'évaluation et que l'on ne pourra pas m'identifier dans les utilisations éventuelles de ces informations. Je comprends que ma participation à ce projet de recherche est volontaire et que je peux choisir de ne pas participer à cette étude, auquel cas, les soins futurs que je recevrai ou que le membre de ma famille recevra à l'Hôpital Royal Ottawa n'en seront aucunement affectés.

J'accepte de participer à ce projet d'évaluation.

Nom: ____________________

Signature: ____________________

Date: ____________________

APPENDIX E. CAREGIVER OUTCOME EVALUATION MEASURES:

Burden Assessment Scale

Professional Support Scale

BURDEN ASSESSMENT SCALE

Your Name_______________Patient's name__________________Date(m/d/y)_________

We would like to know how you are doing caring for your relative. The following is a list of things which other people have experienced because of their relative's illness. Please think back to the *past two weeks* and indicate the extent to which you have had the following experiences by circling a number, from 1 (not at all) to 4 (a lot), for each statement.

Because of your loved one, to what extent have you, in the past two weeks:	**Not at all**	**A little**	**Some**	**A lot**
Experienced financial strains and/or financial difficulties	1	2	3	4
Missed days at work (or school)	1	2	3	4
Found it difficult to concentrate on your own activities	1	2	3	4
Had to change your personal plans, e.g. going on vacation	1	2	3	4
Cut down on leisure time	1	2	3	4
Found the household routine was upset	1	2	3	4
Had less time to spend with friends	1	2	3	4
Neglected other family members' needs	1	2	3	4
Experienced family frictions and arguments	1	2	3	4
Experienced frictions with neighbours, friends outside the home	1	2	3	4
Been embarrassed because of your relative's behaviour	1	2	3	4
Felt guilty because you were not doing enough to help	1	2	3	4
Felt guilty because you felt responsible for you relative's problems	1	2	3	4
Resented your relative for demands made on you	1	2	3	4
Felt trapped by your caregiving role	1	2	3	4
Been upset about how much your relative changed from his/her former self	1	2	3	4
Worried about how your behaviour with your relative might worsen the illness	1	2	3	4
Worried about what the future holds for your relative	1	2	3	4
Found the stigma of the illness upsetting	1	2	3	4

QUESTIONNAIRE POUR LE SOIGNANT: Problèmes

Nom______________Nom du patient________________Date(m/j/a)_____

Nous aimerions savoir comment vous vous débrouillez pour soigner le membre de votre famille (le patient). Voici une liste de problèmes qui ont affecté d'autres personnes à cause de la maladie d'un membre de leur famille dont elles s'occupent. Pensez aux deux dernières semaines et indiquez dans quelle mesure vous avez eu les expériences suivantes en encerclant un chiffre, allant de 1 (pas du tout) à 4 (beaucoup), pour chaque énoncé.

À cause du patient, dans quelle mesure avez-vous, au cours de ces 2 dernières semaines:	**Pas du tout**	**Un peu**	**Assez**	**Beaucoup**
Eu des difficultés financières	1	2	3	4
Eu des jours d'absence du travail ou de l'école	1	2	3	4
Trouvé difficile de vous concentrer sur vos propres activités	1	2	3	4
Dû changer vos plans personnels, comme changer de travail ou prendre des vacances	1	2	3	4
Dû réduire vos loisirs	1	2	3	4
Observé que la routine de votre foyer était changée	1	2	3	4
Eu moins de temps à passer avec des amis	1	2	3	4
Négligé les besoins d'autres membres de la famille	1	2	3	4
Eu des frictions et des disputes familiales	1	2	3	4
Eu des frictions avec des voisins ou amis hors du foyer	1	2	3	4
Eté embarrassé à cause du comportement du patient	1	2	3	4
Eu un sentiment de culpabilité parce que vous n'en faites pas assez pour l'aider	1	2	3	4
Eu un sentiment de culpabilité parce que vous vous sentez responsable des problèmes du patient	1	2	3	4
Eprouvé de la rancune envers le patient parce qu'il vous demandait d'en faire trop	1	2	3	4
Eu l'impression d'être pris au piège dans votre rôle de soignant	1	2	3	4
Eté bouleversé par la manière dont la personnalité du patient a changé	1	2	3	4
Eté inquiet parce que votre comportement face au patient pourrait aggraver sa maladie	1	2	3	4
Eté inquiet de ce que l'avenir réserve au patient	1	2	3	4
Trouvé les stigmas de la maladie bouleversants	1	2	3	4

PROFESSIONAL SUPPORT SCALE

Please rate, on a scale ranging from 1 (not at all) to 4 (a great extent) the extent to which staff at the Royal Ottawa Hospital were helpful in each of the areas listed below.

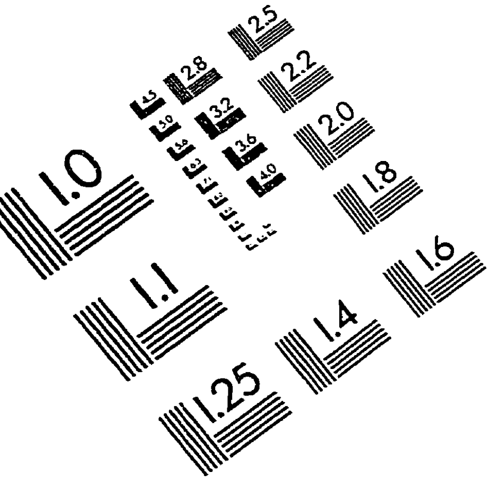
To what extent did staff provide.....	**Not at all**	**A little**	**A moderate extent**	**A great extent**
1. Information about your relative's illness	1	2	3	4
2. Information about your relative's treatment	1	2	3	4
3. Help in locating resources for yourself	1	2	3	4
4. Help in locating resources for your relative	1	2	3	4
5. Practical advice on how best to deal with your relative's behaviour(s)	1	2	3	4
6. Advice for future planning for your relative	1	2	3	4
7. Assistance in handling psychiatric emergencies	1	2	3	4
8. Positive reinforcement for your caregiving abilities	1	2	3	4
9. Encouragement for you to be involved in decisions regarding your relative's treatment plan	1	2	3	4
10. A nonblaming attitude	1	2	3	4
11. Encouragement for you to invest energy in noncaring aspects of your personal life	1	2	3	4

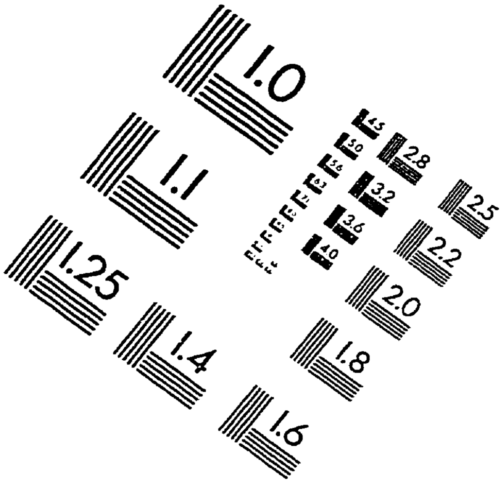
QUESTIONNAIRE POUR LE SOIGNANT: Mesure de Support

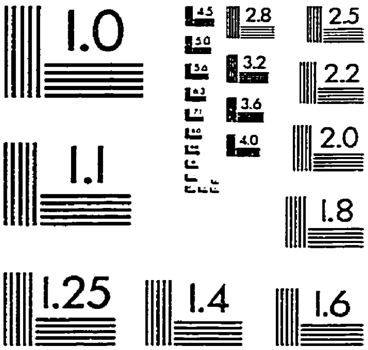
Veuillez indiquer par un chiffre allant de 1 (pas du tout) à 4 (beaucoup) la manière dont le personnel de l'Hôpital Royal Ottawa vous a aidé, dans chacune des sections ci-dessous.

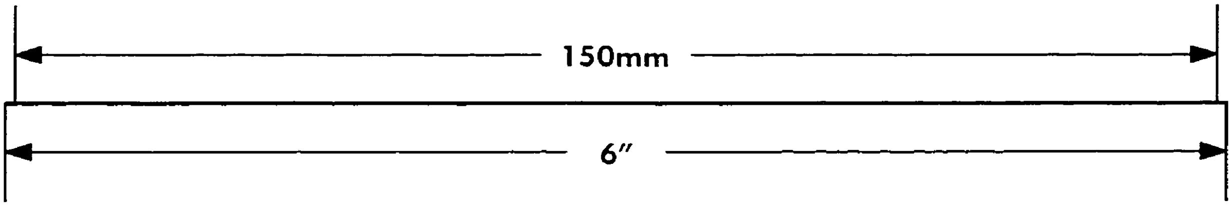
De quelle manière le personnel vous a-t-il fourni...	**Pas du tout**	**Un peu**	**Modéré-ment**	**Beau-coup**
1. Des informations sur la maladie du patient	1	2	3	4
2. Des informations sur le traitement du patient	1	2	3	4
3. De l'aide pour trouver des ressources pour vous-même	1	2	3	4
4. De l'aide pour trouver des ressources pour le patient	1	2	3	4
5. Des conseils pratiques sur la manière de mieux faire face au comportement du patient	1	2	3	4
6. Des conseils pour la planification de l'avenir du patient	1	2	3	4
7. De l'aide pour faire face aux urgences psychiatriques	1	2	3	4
8. Un renforcement positif de votre capacité de soignant	1	2	3	4
9. Un encouragement à votre participation aux décisions concernant le plan de traitement du patient	1	2	3	4
10. Une attitude libre de tout blâme	1	2	3	4
11. Un encouragement à ce que vous investissiez votre énergie dans les aspects de votre vie autres que ceux de soignant	1	2	3	4

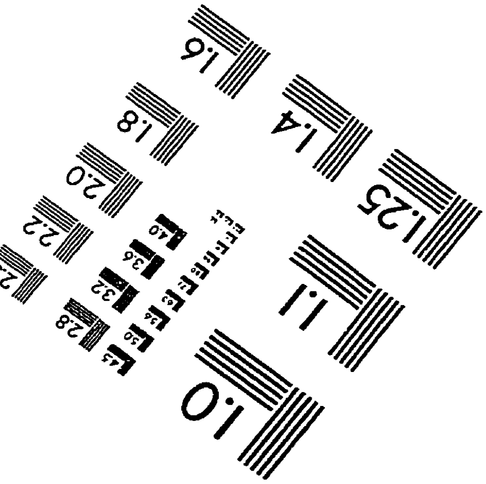
IMAGE EVALUATION
TEST TARGET (QA-3)











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