A COMPARISON OF THE IMPACT OF TWO COMPREHENSIVE GERIATRIC ASSESSMENT PROCEDURES ON QUALITY OF LIFE AND SERVICE USE

DIANE MORIN

THESIS SUBMITTED FOR THE DEGREE OF
PHILOSOPHY DOCTORATE (Ph.D.)
UNIVERSITY OF LONDON

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE
DEPARTMENT OF PUBLIC HEALTH AND POLICY
HEALTH SERVICES RESEARCH UNIT

APRIL 1999

À Dorothée et Pierre pour leur témoigner

mon affection et mon attachement

mais surtout pour les remercier de m'avoir accompagnée!

ABSTRACT

Home care of the elderly is of increasing concern not only to purchasers and providers of health care but also to the public and to those responsible for providing social care. As with any service, the aim must be to provide care that is appropriate for each individual. To achieve that, valid and reliable measures of a person's needs are required and resources are to be used as efficiently as possible. A considerable amount of work has been carried out to develop such normative-based measures for assessing the home care needs of the elderly in the form of comprehensive geriatric assessment (CGA). CGA is a commonly used technology which has been shown to be associated with improved health status and lower service use. Despite widespread use, however, the effectiveness of different CGAs has not yet been fully investigated. In the Province of Quebec, Canada, two CGAs which differ in comprehensiveness and resource requirements are being used to assess needs at entry to home care.

The aim of this study is to compare the differential impact of these two CGA procedures on patient outcomes: the *Système de mesure de l'autonomie fonctionnelle*, the longer, more comprehensive and resource-intensive CGA, and the *Admission au maintien à domicile* which is a shorter and less resource-intensive form of CGA. In a prospective cohort study, 158 elderly patients aged 65 years or over were assessed at admission to home care using one or the other CGA and changes in health-related quality of life as well as service use were monitored and compared at the

end of a 12-week follow-up. Costs related to the use of a long or a short-form CGA were also explored. These comparisons were made while controlling for patient (age, gender, living alone, quality of life at entry, depression), process (type and intensity of care received) and structural variables (budget and staff mix).

Results from comparative and multivariate analyses are in favour of not rejecting the null hypothesis that both forms of CGAs are similarly associated with outcomes. Depression was the strongest predictor of changes in quality of life and high intensity of care and a low proportion of nurses on the home care teams were the strongest predictors of service use outside HC. These results lead us to discuss whether long or short-form CGAs were developed on a comparative rather than a normative definition of needs.

The implications of these findings for home care policy and practice are discussed and suggestions for future research are presented.

AC	Acute care
ADL	Activities of daily living
BOD	Burden of disease
BP	Bodily pain (dimension of the SF-36)
CARE	Comprehensive assessment and Referral Examination
CGA	Comprehensive geriatric assessment
CIRS-G	Cumulative Index Rating Scale - Geriatrics
CLSC	*Centre local de services communautaires* (primary health care centre)
ESD	Centre for Epidemiological Studies Scale of Depression
GDS	Geriatric Depression Scale
GH	General Health (dimension of the SF-36)
GU	Geriatric unit
HC	Home care
HRQOL	Health-related quality of life
IADL	Instrumental activities of daily living
ICC	Intraclass correlation
INT	Intensity of care
MAI	Multilevel Assessment Instrument
MCS	Mental Component Summary (summary score of the SF-36)
MH	Mental health (dimension of the SF-36)
MMSE	Mini-Mental State Exam
NMDS	Nursing Minimum Data Set
OPC	Outpatient care
PCS	Physical Component Summary (summary score of the SF-36)
PF	Physical functioning (dimension of the SF-36)
RCT	Randomised Clinical Trial
RE	Role - emotional (dimension of the SF-36)
RP	Role – physical (dimension of the SF-36)
SD	Standard Deviation
SEM	Standard error of measurement
SF	Social functioning (dimension of the SF-36)
SF-CGA	Short form CGA
SF-36	Short-form - 36 questions - Quality of life instrument of the Medical Outcome Study
SMAF-CGA	*Système de mesure de l'autonomie fonctionnelle* - Long form CGA
UK	United Kingdom
US	United States
VT	Vitality (dimension of the SF-36)

TABLE OF CONTENTS

APPENDICES

LIST OF TABLES

IN CHAPTER ONE: INTRODUCTION

IN CHAPTER TWO : STUDY PROTOCOL

IN CHAPTER THREE: RESULTS

LIST OF FIGURES

First I would like to thank my thesis supervisor Dr Donna L. Lamping for her guidance and advice. In addition to helping me develop the design of this study, she has extensively and critically reviewed numerous drafts of this work. I thank her for the support she provided me in the face of three obstacles. First, at one point the research project had to undergo substantial changes, mainly because it was conducted during a major reform of the health system in Quebec. Dr Lamping aided me in reorienting a number of aspects of the project while continuing to appraise the work that had already been performed. Second, on account of my being an overseas student, supervision was complicated, but Dr Lamping succeeded in providing me supervision. Third, English is not my mother tongue; while this fact often created limits to my understanding and ability to expressed my ideas, she has remained supportive.

I also thank the members of my thesis Advisory Committee, Professor Nick A. Black and Dr Siobhan Cotter, both from the London School of Hygiene and Tropical Medicine, as well as Professor Sally J. Redfern, Director of the Nursing Research Unit of King's College in London. They acted as knowledgeable and patient advisors throughout the course of the study. They provided advice, support and encouragement, all of which I needed and appreciated more than they could possibly imagine.

I sincerely thank Professor Paul Lamarche at the *Département de*

médecine sociale et préventive - Faculté de Médecine, Université Laval. During field work, he helped me clarify my ideas and put them into action. With his gift for sensitive humour, he provided me on numerous occasions the priceless reassurance that my work was valuable and worth pursuing.

I thank all of members of home care programmes in Québec who provided assistance with recruitment, interviews and chart review and who, in addition, participated in discussions about the operational aspects of the study. I am also grateful to the home care patients who, despite their age and frailty, accepted and took the necessary time to participate in the study.

Special thanks to colleagues in the Health Services Research Unit at the London School of Hygiene and Tropical Medicine who provided sound advice, valuable friendship as well as all kinds of help and troubleshooting during my stays in London.

CHAPTER ONE: INTRODUCTION

Long term care of the elderly is of increasing concern not only to purchasers and providers of health care but also to the public and to those responsible for providing social care. As with any service, the aim must be to provide care that is appropriate for each individual. To achieve that, valid and reliable measures of a person's need are required and resources are to be used as efficiently as possible. A considerable amount of work has been carried out to develop such measures for assessing the home care needs of the elderly. These co-called "comprehensive geriatric assessments" or CGAs tend to be long and complex and, therefore, relatively time consuming and expensive for staff to use. The availability of shorter versions would potentially be of considerable value to home care providers. This thesis aims to compare the impact on health and health care use of elderly patients assessed using a short CGA with those assessed using a more traditional long form. Before carrying out such a comparison however, it is first necessary to consider some theoretical or conceptual aspects of need and, second, to review the methods that have been use to operationalise such concepts. This first chapter concludes by describing some features of existing home care services for the elderly in Quebec, where fieldwork for this thesis was conducted, and by clarifying the objectives addressed. In Chapter Two the study protocol, the methods and the plan for analysis are described. Results are reported in Chapter Three. Finally, the study findings and limitations are presented in Chapter Four, with suggestions for future research.

1.1. NEEDS AND NEEDS ASSESSMENT: A CONCEPTUAL FRAMEWORK

1.1.1 NEED FOR HEALTH AND NEED FOR HEALTH CARE

The concept of need is complex and subject to different interpretations depending on the assessor (Culyer, 1976; Doyal & Gough, 1991; Liss, 1993; McGuire, Henderson & Mooney, 1988; Zautra, Bachrach & Hess, 1983). One of first attempts to elucidate what is meant by need was provided by Bradshaw (1972) who identified four distinct concepts that should be considered by health services researchers and policymakers when making decisions about health care.

The first concept of need elucidated by Bradshaw is the need that people perceive they have for better health. Doyal and Gough (1991) considered that Bradshaw's view of 'felt need' (which they refer to as 'wants') is a result of an orthodox approach based on an economic theory in which the implicit message is " only the clients really know what they need " (p.12). They argue that although this vision of need can be used to determine wants, it can never serve as the sole marker of needs for health care. To make such a connection, it would be necessary to assume that there is an efficient intervention or service for every health need – a proposition that is clearly untrue.

Bradshaw's second concept is 'expressed needs', that is the demand for care from people who feel they are in need of better health care. Expressed needs can be measured in terms of the total of individuals who voluntarily present to health services. This definition of need is often used in health services

research; one example is consultation rates in primary care or attendance rates in emergency facilities. Expressed needs, like felt needs, is an incomplete basis for decision making as for example, it fails to take presymptomatic health problems into account. This view is shared by McGuire and his colleagues (1988) who argued that expressed need (or 'demand') is often determined by implicit or explicit patterns of care consumption and/or by individual or societal perceptions of what constitutes the best available health care irrespective of whether or not the particular care is efficient. They also point out the dangers of patient-induced and expert-induced supply, which may fail to take account of the efficacy and efficiency of services provided purely in response to a demand.

The third concept of need defined by Bradshaw is 'comparative need'. This is based on a simple comparison of the services used by a population with other populations possessing similar characteristics. This definition is used in an attempt to standardise service provision geographically. The problem is that it is frequently unsupported by evidence about whether the services that are provided are cost-effective. The basis of such a definition implies that populations not receiving care are in need compared to those who are in receipt of services. Hence this definition relies on the crude level of provision at the population level without considering the effectiveness of the services.

The last of Bradshaw's four concepts is 'normative need'; a concept that is accepted by a majority of authors in the field of needs assessment. Unlike felt need and expressed need, normative need refers to a person's need for health care. A normative need can only be considered to exist if there is an effective

and efficient intervention in that society at that time. As Bradshaw stated, it is important to consider that "a normative definition of needs is in no sense absolute" (p.72) as it can evolve over time as a result of scarce resources, the development of knowledge, or as a result of changing values in society which may alter attitudes to health and overall functioning. This definition of needs would have to apply within a context of finite resources (Stevens & Gillam, 1998).

The definition of normative need has been widely debated and many have argued that in order to attain a client-specific or norm-based level of functioning, needs can only be taken into consideration when effective interventions are available to deal with them (Culyer, 1976; Donabedian, 1973, 1974; Liss, 1993; McGuire, Henderson & Mooney, 1988; Sheaff, 1996; Stevens & Raftery, 1994; 1997). According to Liss (1993) " if agreement about health and underlying values and choices about efficient strategies does not exist, as concerns needs related to health, there is unlikely to be a ground for arbitration when choosing need-satisfying strategies " (p.195). Normative needs are regarded as the most appropriate definition for needs assessment, both at population and individual levels, because normative needs are limited to those from which patients can, because of the presence of evidence-based interventions, benefit (Culyer, 1976; McGuire et al., 1988).

1.1.2 INDIVIDUAL VERSUS POPULATION NEEDS ASSESSMENTS

The basis of health needs assessment is anchored in epidemiology which is " the study of the distribution and determinants of health-related states (...) in

populations and of the applications to control health problems" (Williams & Wright, 1998; p.1379). The ability of populations to benefit from health care is equal to the sum of the abilities of each individual to benefit from health care. There is no guarantee that every patient will benefit but rather, that because the services provided have been shown to be effective, the likelihood is that a greater number of individuals will, on average, benefit. Consequently, most of the work needs assessment has emerged from the desire to provide useful information in priority setting and the commissioning of health care at a population level in order to provide cost-effective services (Culyer, 1976; Stevens & Gillam, 1998).

Ideally, service requirements would be determined by assessment of a population normative need. In practice, comparative need is usually used. This can be seen in Stevens and Raftery's (1994, 1997) work which collated protocols for health care needs assessment for seven disease specific topics: accident and emergency care, child and adolescent mental health, low back pain, palliative and terminal care, dermatology, breast cancer, genitourinary medicine and gynaecology. These protocols have the following in common; (i) a review of the distribution of disease expressed as prevalence and incidence in specific populations, (ii) a review of services currently available at primary, secondary and tertiary levels of care, (iii) a comparison of the type and availability of services provided by area and the efficacy of these services in terms of benefits to patients, (iv) a recommendation as to which national or regional priorities should be pursued. These epidemiologically oriented needs assessment protocols contribute to and enhance our knowledge regarding the extent of

problems, the services currently provided and can assist in centralised decision making.

However, Wright, Williams and Wilkinson (1998) point-out that " distinguishing between individual needs and the wider needs of a population is of great importance in the planning and provision of local health services " (p.1380). Although services might have been proved to be effective at a population level using epidemiological data, it is those services which have been planned on the basis of individual needs that have been shown to be much more sensitive to patients' ability to benefit at a local level. These authors consider that if individual need is ignored, there is a high probability that the choice of local services will be based on a top-down approach which is not evaluated in terms of, or dependent upon an individual patients' ability to benefit. They consider that an epidemiological approach is not appropriate to assess needs in small populations or at a service or individual level except for some rare health conditions which may have a disproportionate impact on patients, services and/or costs. It is clearly important therefore to consider assessing individual needs. It has been argued that patients should be entitled to have their specific needs assessed because their needs may not have been captured by the epidemiologically orientated assessment of the health care needs of a community (Wright, Williams & Wilkinson, 1998). A primary definition of individual needs assessment may be characterised as " a series of procedures for identifying and describing present needs of individuals in a specific context in order to plan the most appropriate care currently available " (Witkin & Altschud, 1995: p.10).

There are alternatives to epidemiological approaches which depend on the underlying purpose, context and intended use of the needs assessment. Wilkinson and Murray (1998) suggest that, although needs assessment can be performed at many different levels, from an international to an individual perspective, needs assessment in primary care should focus on individuals in fairly narrowly defined categories such as those currently receiving care from specific programmes. Such needs assessments should be based on a thorough understanding of the presenting clinical problem, on an agreed standard for measuring the various dimensions of functioning as well as on an awareness of what is the most appropriate care available. Providers could then choose needs satisfying strategies using a normative, patient-based needs assessment paradigm.

Needs assessment is not only a matter of assessing a person's condition and allocating evidence-based services as it is influenced by those assessing need and the context in which it is assessed. Assessment can be performed by various professionals such as physicians, nurses, social workers or occupational therapists. It can also be performed in different settings such as hospital wards, or outpatient clinics as well as in nursing or private homes. Because assessors and assessed have different views on the presenting conditions and their consequences and on the best possible care necessary to meet the identified needs, individually-based needs assessment instruments need to be standardised. This has not always been straightforward as a result of changes in the individual's state of health and on variations in the availability of the most

appropriate care. Despite this, the basic components should be similar in that they cover assessment of all aspects of the patient's condition.

1.2. COMPREHENSIVE GERIATRIC ASSESSMENT

Highly refined, individually-based needs assessment strategies have been developed in many different fields of health care and can be considered as specific technologies of care in their own right. They may be judged by their usefulness in clinical decision making and in the planning of packages of care that demonstrate improved outcomes. These needs assessment procedures or protocols are being developed to be more disease-specific. Studies have demonstrated that many of them are beneficial in terms of their effectiveness and efficiency. For example, Thompson (1996) reported that short-term ventilated patients received endotracheal suctioning either in response to a specific needs assessment or routinely. The group of patients who were suctioned in response to the assessment, had significantly better outcomes and fewer complications than those routinely suctioned. In the field of critical care, Bastos et al. (1993) examined the hypothesis that the use of the Acute Physiology and Chronic Health Evaluation (APACHE version III) to assess the needs of patients in intensive care would decrease mortality. In their prospective multicenter descriptive cohort study the use of APACHE III was indeed associated with a significantly reduced mortality ratio ($p \leq 0.001$). A further example comes from the field of paediatrics where Jensen et al. (1996) developed and tested a needs assessment instrument for a variety of paediatric settings that included clinical, psychosocial, demographic, and family history factors. These questionnaires

were completed for half the patients, the other half being assessed using the usual ad hoc approach. Analysis revealed a high degree of accuracy and completeness of the data, and confirmed the feasibility of using standardised needs assessments in routine clinical settings. Additionally, it highlighted their impact in reducing the overall service consumption levels in those assessed. Such data-gathering tools therefore appear to have significant merit and deserve implementation across a range of clinical settings.

One of the areas of health care where needs assessment has become most popular is health care for the elderly. The concept of comprehensive geriatric assessment (CGA) originated in the UK during the 1930s, by Marjory Warren and her colleagues who created specialised assessment units in chronic long-term care hospitals (cited in Applegate et al., 1991). CGA was initially defined in 1987 by the National Institutes of Health Consensus Conference on Geriatric Assessment Methods for Clinical Decision-Making as a "multidisciplinary evaluation in which the multiple problems of older persons are uncovered, described, and explained if possible, and in which the resources and strengths of the person are catalogued, need for services assessed, and a co-ordinated care plan developed to focus interventions on the person's problems" (American Geriatrics Society Public Policy Committee, 1989 : p.473). It has, more recently, been defined by Rubenstein and his colleagues (1991a) as "a multidisciplinary evaluation process intended to determine a frail elderly person's medical, psychosocial, and functional capacities and limitations to develop a plan for treatment and long-term follow-up" (p.37S). The challenge of assessing elderly patients' needs, for which CGA are said to have been developed, is to

identify those who experience deterioration in health and functioning in different domains and to plan efficient care (Rubenstein, Wieland & Bernabei, 1995). More specifically, the growing demand for home care is becoming an increasingly important issue in all developed countries as the proportion of the population aged 65 years and older increases and there expectations rise (Williams, 1994). Therefore, home care is facing the challenge of responding to the needs of this growing section of the population whilst, at the same time, using limited resources efficiently. As many authors have suggested, this challenge is exacerbated by the fact that many elderly persons have multiple health problems and are more vulnerable to social, psychological, and economic stress factors (Kane & Kane, 1981; Challis, Darton, Johnson, Stone & Traske, 1991).

Since the 1970s, interest in CGAs has grown substantially in the UK and the US, largely due to the work of Williams and his colleagues (1973), who first studied the relationship between outpatient geriatric assessment procedure and nursing home placements. Since this time, needs assessment has been studied in different settings including home care. As a result, a substantial amount of work on the development and applications of CGAs has accumulated over the last ten years. The literature mainly relates to their development and application and to the evidence that they are efficient in identifying and meeting the needs of elderly people.

1.2.1 CONTENT AND PROPERTIES OF 'GOLD STANDARD' CGAs

In the last two decades, different types of CGAs have been developed, implemented and studied. The common indications for their use include establishing baseline descriptions of patients, screening for risk factors or undetected problems, assisting in diagnosis, setting medical, nursing, rehabilitation, or therapeutic objectives and monitoring patients' condition over time. Although different CGAs differ in their comprehensiveness, length, and therefore, in the time necessary for completion, there is general agreement about the domains and dimensions of functioning that should be covered to investigate the needs of elderly patients. Four particular CGAs are considered as 'gold standard' instruments because they include multiple aspects of a person's ability to function using defined standards, their reliability and validity have been verified, and their use extensively studied. The aspects of health that are included for assessment in each of these four 'gold standard' CGAs are described next. These CGAs will be referred to again in a later section in order to make comparisons with the CGAs used in the fieldwork for this thesis.

1.2.1.1 THE MINIMUM DATA SET-RESIDENT ASSESSMENT INSTRUMENT

This instrument commonly referred to as the MDS-RAI was developed in the US by Morris (1990) and has been used internationally. The development of this uniform, comprehensive assessment system was one of the key recommendations of the Institute of Medicine's Committee on Nursing Home Regulation, which was charged with examining methods to improve the quality of

care in nursing homes. As reported by Hawes and colleagues (1995), the IOM Committee recognised that data from such assessments were essential to the development of outcome-oriented measures of quality. The implementation of such a patient-based federal certification procedure is seen "as essential to the development of an individualised plan of care based on each patient's needs (...) that focused on improving, maintaining, or minimising decline in the patient's functional status and quality of life" (p. 173). In fact, the 1987 Omnibus Budget Reconciliation Act required all nursing homes participating in the Medicare or Medicaid programmes in the US to use the MDS-RAI for assessments at entry to nursing homes and for monitoring the residents over time. Although initially developed for allocating nursing services in a variety of settings, it is now said to be the most widely and well-known CGA instrument in home care to date (Fillenbaum, 1986, 1988; Hawes et al., 1995). It is argued that the MDS-RAI is an information system to measure needs of elderly patients which is sensitive to an individual patient's potential for self-care or recovery (Rantz, 1995). The main domains included in the MDS-RAI are physical functioning, activities of daily living or instrumental activities of daily living, (ADLs and IADLs), psychosocial functioning (anxiety, depression, life satisfaction, cognitive function, family support, social support), and the disease burden assessed in terms of severity of illness. Sociodemographic characteristics and the economic profile of the elderly person are also included in the MDS-RAI.

Establishing the reliability of a CGA instrument like the MDS-RAI and developing a valid profile of need from the functional and psychosocial status of home care patients or nursing home residents is a task that defies usual

quantitative approaches to measurement. This is true because nursing home residents and home care patients come from a population who often presents special measurement challenges. For example, the majority of home residents and a significant proportion of home care patients have some cognitive impairment and many exhibit problems in physical functioning as well. Initial testing of the reliability of the RAI of the MDS, was done by Morris (1990). Results indicated poor reliability for most items. In fact, the first reported field trial (which is referred to as the Small Scale Trial) demonstrated that the inter-rater reliability for 55% of the items, as measured by the intra-class correlation coefficient, varied from 0.35 to 0.65. The authors highlighted redundancy in specific items and difficulties in administering the scale. Following the initial report on the poor reliability and validity of the MDS-RAI's, concerns were raised about the use of the MDS-RAI (Teresi et al., 1984). On the basis of the analyses from the Small Scale Trial, the authors retained 40% of the original items, dropped 20% of the items and altered 40%. The results have therefore led to deleting or revising more than half the items, changing the procedures used for gathering information and the implementation of a second study to revise the overall layout of the MDS-RAI. More work to enhance the reliability of the MDS-RAI was therefore carried out in a second set of studies. In the most recent of these studies, Hawes and her colleagues (1995) have shown that the revised RAI scale items meet standards for internal reliability (i.e., inter items correlations of 0.75 or higher in all key areas of functioning, such as cognition, ADLs, continence, and diagnoses). Sixty-three percent of the items achieved reliability coefficients of 0.65 or higher and 90% achieved at least 0.60. Inter-rater reliability coefficients also improved; as 79% were 0.70 or over.

The MDS-RAI, originally developed for use in nursing home residents, was adapted for use in a home care setting and renamed MDS-HC. The psychometric properties of the MDS-HC were examined in an international trial of home care patients (Bernabei, Murphy, Frijters, DuPaquier & Gardent, 1997). The reliability of the MDS-HC and the MDS-RAI were compared. Independent, double assessment of clients in home care agencies was performed by trained clinicians using a group of 780 home care patients and a sub-group of 187 home care patients from the US. Forty-seven percent of the functional, health status, social environment and service items in the MDS-HC overlapped with the original MDS-RAI. For these item sets, the average weighted inter-rater reliability Kappa coefficient was 0.75 with 100% of the items over 0.70. Similarly, high internal consistency was found for items that were introduced as part of the MDS-HC (100% of the alpha coefficients were over 0.70); these items were not in the original MDS-RAI CGA. The findings indicate that the core set of items in the MDS-RAI are equally reliable in a home care setting and that the new items introduced in the home care version are also highly reliable. This instrument can therefore reliably serve as 'gold standard' against which other CGAs can be compared in a broad spectrum of service settings, including nursing homes and home care programmes.

1.2.1.2 THE COMPREHENSIVE ASSESSMENT AND REFERRAL EVALUATION

This is another widely used CGA. The CARE is a semi-structured interview questionnaire developed and revised by Gurland (1978) to assess needs in community-dwelling adults aged 65 years and over receiving psychiatric care in the community. It is mainly used to investigate psychological and emotional functioning. The CARE generates three scores to use in decision-making about the type or amount care to be allocated. The CARE has also been used in international surveys to describe the characteristics of community-dwelling elderly persons (Gurland, Golden, Teresi & Challop, 1984).

The CARE includes questions on physical, psychological and social functioning. Gurland (1978) reports that it was developed using elements of other instruments, including the Older American Resources and Services - Multi-Functional Assessment Questionnaire (Fillenbaum, 1981) and the Structured and Scaled Interview to Assess Maladjustment which he had developed previously (SSIAM; Gurland et al., 1972). The initial version of the CARE consisted of 1,500 items administered by a 5-hour interview. A shorter version was later tested: the SHORT-CARE (Gurland et al., 1984) which now includes 143 items. The reliability and validity of three sub-sets of items (physical, psychological and social functioning) have been investigated in a study in which three training psychiatrists interviewed 35 patients. The inter-rater reliability coefficient assessed using Pearson's correlation coefficient were 0.94, 0.76, and 0.91 for the three sets of items. Respectively, internal consistency (Cronbach)

coefficients were 0.75, 0.64, and 0.84. A third version, the CORE-CARE, includes 329 items grouped under 22 dimension sub-scales.

To assess the psychometric properties of the CORE-CARE, two professionals interviewed 30 patients. Inter-rater agreement as assessed by weighted Kappas, ranged from 0.70 to 0.80, whereas internal consistency alpha coefficients ranged from 0.72 to 0.95. The psychiatric dimension of the scale was tested for convergent validity. For twenty-six respondents, who were classified as 'normal' or 'psychiatric cases' by the examining psychiatrist, the specificity of the CORE-CARE to detect mental problems was 100% and its sensitivity was 71%. On the ADL dimension, convergent validity was tested using the Katz Index (Katz, Downs & Nash, 1970) and all correlation coefficients ranged from 0.66 to 0.93. These results show that the CORE-CARE can be compared to other CGAs in the assessment of needs of elderly housebound patients.

1.2.1.3 THE MULTILEVEL ASSESSMENT INSTRUMENT

The MAI was developed for elderly patients at the Philadelphia Geriatric Centre (Lawton, Moss, Fulcomer & Kieblan, 1982; Hughes et al., 1990; 1992). It is based on Lawton's conceptual model which views functioning in terms of a "hierarchy of increasingly complex activities ranging from basic biological functions through perceptions and cognition, to skills in self-care and complex social interactions" (McDowell & Newell, 1987; p.296). The 147-item MAI comprises seven dimensions and 14 subscales which measure physical health, ADLs, instrumental activities of daily living (IADLs), cognition, adaptation to

change, social interaction and environmental aspects (home and community factors). In addition to being used as a CGA, the MAI is currently used to classify patients prior to placement in a nursing home. It has also been used to assess functional status in elderly cancer and non-cancer patients (McGill & Paul, 1993).

The reliability of the MAI was tested in a sample of 35 respondents who were interviewed by two independent interviewers at a 3-week interval. Internal consistency (Cronbach alpha) ranged from 0.68 (social functioning dimension) to 0.88 (physical functioning dimension). Test-retest for 22 respondents ranged from 0.75 to 0.99, with exception of the ADL dimension, which was at 0.61. Another internal consistency study using 590 respondents showed that Cronbach's alphas ranged from 0.69 on the cognitive domain to 0.93 on the physical functioning domain (Lawton & Brody, 1969). Pearsons's correlation coefficient showed that the convergent validity between the physical dimension of the scale and the Katz Index (Katz et al., 1970) ranged from 0.56 to 0.62. Social interaction correlations were as high as 0.76 when ratings of residents were compared with those of a housing administrator for 180 nursing home respondents. The reliability and validity of the MAI supports its use as a 'gold standard'.

1.2.1.4 THE OLDER AMERICAN RESOURCES AND SERVICES - MULTI-FUNCTIONAL ASSESSMENT QUESTIONNAIRE

The OARS-MFAQ was developed by the Centre for Aging and Human Development at Duke University (Fillenbaum, 1988; Pfeiffer, 1975) to assess needs and allocate services for patients in hospital. It was later adapted to give a comprehensive profile of the level of functioning and needs of older persons living at home who are physically impaired (Krach & Yang, 1992; Reuben, Valle, Hays & Siu, 1995). The OARS-MFAQ consists of two parts: Part A is composed of the MFAQ and measures functioning in five domains: ADL, IADLs, mental health, social and economic aspects of well being. Part B, the Service Assessment Questionnaire, provides guidelines for allocating services and choosing the most appropriate services according to the most important needs identified by the MFAQ.

Part A of the OARS, the 120-item MFAQ, generates five overall ratings, one for each domain. As scores are typically assigned on the basis of raters' judgement of questionnaire responses, validation studies were based on inter-rater reliability assessed by intra-class correlation coefficients. Fillenbaum (1988) reports intra-class correlations from 0.66 for physical health to 0.87 for self-care. Raters were in complete agreement for more than 70% of the items. Five-week test-retest correlations were 0.82 for the ADL sub-scale, 0.71 for the IADL scale and 0.79 for items on economic aspects.

Because of the ordinal nature of the items used in Part B, their psychometric properties were measured using the Kendall inter-rater coefficient. The Centre for the Study on Aging and Human Development (1978) found that the coefficients of concordance varied from 0.70 to 0.93, with 50% of the coefficients being 0.85 or above. Criterion validity was measured in 33 family medicine patients. A panel of experts established separate criterion ratings for each section of the questionnaire. Spearman correlation coefficients ranged from 0.57 for the mental health domain to 0.89 for IADLs. As the OARS has been recommended by WHO (Fillenbaum, 1986) for use in elderly populations, it is also used as a 'gold standard' in this study. Table 1 illustrates the domains investigated in the four 'gold standard' CGAs reviewed above.

Table 1: Characteristics of four 'gold standard' CGAs

Domains in relation to standards of health	NMDS[1]	OARS[2]	CARE[3]	MAI[4]
Physical functioning				
ADLs	+	=	=	=
IADLs	+	=	=	=
Severity of illness	+	-	-	-
Psychological health				
Anxiety	+	-	-	-
Depression	+	=	-	-
Cognitive function	+	-	-	-
Social functioning				
Family support	+	=	=	=
Social support	+	=	-	-
Life satisfaction	+	-	=	-

1 NMDS: Nursing Minimum Data Set
2 OARS: Older American Resources and Services
3 CARE: Comprehensive Assessment and Referral Evaluation
4 MAI: Multilevel Assessment Instrument

All CGAs measure five major domains of health: physical functioning, severity of illness, psychological health, social functioning and life satisfaction. Compared to the MDS-RAI, the four other 'gold standard' CGAs contain either the same number (indicated by a =) or fewer elements (indicated by a -). As shown, two domains are assessed using the same number of elements: physical functioning and social functioning. All other domains are more comprehensively investigated in the MDS-RAI than in the other CGAs.

1.2.2 BENEFITS FROM CGAs

Geriatricians have suggested that the two main benefits health services should target are general well being and autonomy (Fillenbaum 1986; Feussner et al., 1991b; Kane & Kane, 1981, 1987; Ramsdell, 1991; Rubenstein et al., 1991a). In their recent monograph, Rubenstein, Wieland and Bernabei (1995) recommend that five major goals should be achieved in order to meet the needs of elderly patients: *mortality*, maintenance or improvement *in physical functioning*, *psychosocial functioning* and in *quality of life* and the *lower use of services* in terms of fewer hospital admissions, medical consultations, long term placements and shorter stays. The American Geriatrics Society Working Group on CGA recommend that "among a large array of goals to be set for elderly patients, we believe the most important are comparative mortality, function, quality of life and service use" (Hedrick et al., 1991: p. 51S). The Centre for Health Services Research in Colorado suggests similar categories of benefits for home care elderly patients (Shaughnessy, Crisler & Kramer, 1989): physical functioning,

psychosocial functioning, HRQOL, the use of institutional care, patient or family knowledge and health status.

The benefits of CGAs have been reported in several studies. Findings from 14 RCTs and three meta-analyses that evaluated the use of CGAs in outpatient, home care or inpatient elderly patients are presented. Studies included were selected on the basis of the following criteria: all were a randomised control trials (RCT) or meta-analyses, were published between 1990 and 1996, and were indexed in either the Medline, Healthplan or Cinahl databases.

1.2.2.1 MORTALITY

The most commonly reported benefit of the use of CGAs is lower mortality. Nine of the 14 trials and the three meta-analyses investigated mortality, a majority of which report lower mortality in patients assessed by CGA. The CGAs were all tailor-made and had been designed according to CGA standards. These studies are discussed below and summarised in Table 2. First, Pathy, Bayer, Harding & Dibble (1992) compared mortality rates at 3-year follow-up in elderly home care patients in the UK who had completed a self-report questionnaire on domestic and social functioning and perceived needs for services (n= 273) with patients who were evaluated as usual by a general practitioner prior to home care (n= 252). At 3-year follow-up, mortality was significantly lower in the experimental group than in controls (18% vs. 24 %; *CI*: 1.0-11.9; $p \leq 0.05$).

Table 2: Studies evaluating the impact of CGAs[1] on mortality

Studies	Design	Setting	*n*		Outcomes
			Cases	Controls	‡=p≤0.05 †=p>0.05
Pathy et al. (1992)	RCT	HC[2]	369	356	↘ mortality at 3 years : 18% vs. 24% ‡
Thomas et al. (1993)	RCT	HC	68	64	↘ mortality at 6 months : 6% vs. 21% ‡ ↘ mortality at 12 months : 10% vs. 20% †
Boult et al. (1994)	RCT	OPC[2]	43	111	↘ mortality at 1 year : 2.9% vs. 19.9% ‡
Epstein et al. (1990)	RCT	OPC	185	201 + 210	↘ mortality at 1 year : 2.9% vs. 5.4% vs. 6.3%†
Silverman et al. (1995)	RCT	OPC	239	203	↘ mortality at 1 year : 3% vs. 5% †
Applegate et al. (1990)	RCT	GU[2]	78	77	↘ mortality at 1 year : 3.5% vs. 4.7%†
Germain et al. (1995)	RCT	GU	52	25	↘ mortality at 6 months : 2.5% vs. 3.6%†
Miller et al. (1994)	RCT	GU	155	58	↘ mortality at 52 months in rehab : 14% vs. 26%‡
Reuben et al. (1995)	RCT	GU	1016	1261	↘ mortality at 12 months : 26% vs. 25%†
Rubenstein et al. (1989)	Meta-ana.	All[2]	911	1216	↘ mortality at 1 year : OR 0.59 : (0.39-0.90) inpatient ; OR : 0.64 (0.50-0.83) outpatient ‡
Rubenstein et al. (1991b)	Meta-ana.	All	2014	2043	Proportional mortality reduction at 6 months:30% ‡
Stuck et al. (1993)	Meta-ana.	All	4959	4912	↘ mortality at 6 months : OR 0.73 (0.61-0.88) ‡ ↘ mortality at 36 months : OR 0.86 (0.75-0.90) ‡

[1] Each study used a tailor-made CGA

[2] HC= Home care ; OPC = outpatient care ; GU= geriatric unit ; All= all settings combined

As the CGA carried out by patients in the Pathy et al. study was self-report, there is a possibility of systematic and directional information bias due to patients over-reporting needs or limitations in order to receive more care. Given the self-report nature of the CGA in this study, results may not be widely generalisable.

Thomas et al. (1993) evaluated mortality in elderly patients (n= 68) randomly assigned to a CGA with control patients who received routine assessment by the physician (n= 64). Authors found that of patients who were still participating in the study at 6 months, 6% of the experimental patients had died compared with 21% of the control patients (p= 0.01). At 12 months 10% of experimental patients and 20% of control patients had died. Although this was not statistically significant, the trend toward lower mortality in experimental patients is likely due to the use of CGA.

Boult et al. (1994) compared mortality in elderly outpatient assessed with a CGA or through regular outpatient care. The 12-moth mortality rate was lower in the patients at high risk of hospitalisation in the experimental group (2.9%) than in the control group (19.2%; X^2= 4.89; p= 0.03). The authors do not report additional analyses to investigate known confounders such as age, severity of illness or care received. This is an important study limitation.

Epstein et al. (1990) evaluated three groups of patients: controls patients who consulted a physician only (n = 205), control patients who consulted a physician and were referred to another physician for a second opinion (n= 210),

and experimental patients referred to CGA assessment by a multidisciplinary team (*n*= 185). There was a decline in mortality between the three groups at 12-month follow-up (respectively 6.3% vs. 5.4% vs. 2.9%), but the difference was not statistically significant (all p values > 0.05). It is possible that the small numbers of patients who died during follow-up (respectively 6, 10 and 13) may account for the failure of these differences to reach statistical significance.

Silverman et al. (1995) evaluated mortality in outpatients receiving CGA in community care (*n*= 239) with that in those receiving traditional community care (*n*= 203) available at one year. Five percent of control group patients versus 3% of experimental patients died during the 12-month follow-up ($p > 0.05$). As mortality was not the primary variable in this study, the authors do not report the tests or the results of tests. It is therefore difficult generalise these results.

Applegate et al. (1990) assessed mortality in elderly patients admitted to a community rehabilitation hospital. At 12-month follow-up, there were fewer deaths in patients assessed using a CGA (3.5%; *n*= 78) compared to patients admitted with usual care (4.7%; *n*= 77; *p*= 0.11). Mortality was significantly lower in CGA patients who had lower levels of autonomy in ADLs at admission and in those who were at lower risk of immediate nursing home placement ($p \leq 0.05$). Findings suggest that mortality is higher in patients who have more needs in terms of poorer standards of health and lack of support and provide evidence concerning benefits of CGAs for these specific patients.

Germain et al. (1995) compared mortality in experimental patients who were admitted to a geriatric unit using a CGA and multidisciplinary assessment (*n*= 54) and control patients who were admitted to hospital using regular procedures (*n*= 25). At 6 months follow-up, mortality was lower in the experimental group (2.5%) compared with controls (3.6%) but this difference was not statistically significant ($p > 0.05$). The main limitation in this study is the small sample size, which may have led to insufficient power to detect significant differences between groups.

Miller et al. (1994) examined differences in cumulative mortality between patients assessed with CGAs (*n*= 155) and patients receiving usual care in medical-surgical or rehabilitation wards (*n*= 58). They followed-up patients from Applegate et al.'s (1990) study using a longer follow-up Applegate et al. did. At 52-month follow-up, there was lower mortality in CGA patients, but only in those who had been admitted to rehabilitation wards (14% vs. 26%; $p = 0.02$). Although 12-month survival was similar between groups (Applegate et al., 1990), findings from this study show the benefits of having longer follow-up.

Reuben et al. (1995) studied 2277 inpatients 65 years of age or older in whom at least one of 13 screening criteria were present (stroke, immobility, impairment in any basic activity of daily living, malnutrition, incontinence, confusion or dementia, prolonged bed rest, recent falls, depression, social or family problems, an unplanned readmission to the hospital within three months of a previous hospital stay, a new fracture, and age of 80 years or older). Of these, 1261 received a CGA and 1016 were assigned to the control group who received

usual care. The 12-month survival rate was similar in both groups: 74% vs. 75% in the experimental and control groups ($p > 0.05$). Although the authors do not explain the lack of differences between the two groups, it is likely that the strict targeting strategy used at inclusion might have biased the study results in the sense that the entry procedure might have served to reveal patients' needs as would have done a CGA. In that sense, it would therefore be possible that an exposure bias occurred, by exposing non CGA patients to a screening procedure that much resembles CGA.

Rubenstein et al. (1989) did a meta-analysis of 16 randomised trials including experimental (*n*=911) and control patients (*n*=1216) from inpatient or outpatient geriatric units. Results showed that elderly patients admitted to inpatient geriatric units using a CGA had significantly lower mortality than controls at 12-month follow-up (*OR*: 0.59; *CI*: 0.39-0.90). Results were similar in elderly patients admitted to outpatient geriatric units using a CGA (*OR*: 0.64; *CI*: 0.50-0.83). Findings demonstrate benefits of CGAs in both settings. One problem is that it is unclear which of the numerous CGAs assessed in the individual trials is the best.

Rubenstein et al. (1991b) performed a second meta-analysis of 19 trials based on experimental (*n*=2014) and control patients (*n*=2043) in four types of settings: geriatric inpatient units, geriatric outpatient units, regular outpatient unit and home care. Results confirmed previous findings of a significant reduction in mortality at six months in experimental patients from three of four settings: inpatient geriatric units (39%; *p*=0.0008), outpatient geriatric units (36%; *p*=0.02)

and home care assessments (29%; p=0.005). There were no differences in mortality between CGA patients and controls in non-geriatric outpatient units (4%; p=0.84). The overall reduction in mortality at six months was 30%.

The third meta-analysis was performed by Stuck et al. (1993). They pooled 28 individual controlled studies comprising 14 hospital-based and 14 community-based trials and compared mortality in exposed (n= 4959) and non-exposed patients (n= 4912). The mortality ratio at 6-month favoured experimental groups (*OR*: 0.73; *CI*: 0.61-0.88). Mortality at 36-month evaluated only in home care settings was also significantly lower in CGA patients compared with controls (*OR*: 0.86; *CI*: 0.75-0.90). The large number of studies and patients in this meta-analysis and the rigour of the analyses provide strong evidence in support of CGAs.

The individual trials show varied results concerning reduced mortality with CGA. Five trials out of nine demonstrated lower mortality in patients assigned to CGAs. Amongst the four studies which did not show evidence for lower mortality in CGA patients, three had relatively small sample size (Thomas et al., 1993; Boult et al., 1994; Germain et al., 1995) which may have limited their power to detect significant differences. Nonetheless, the three meta-analyses, which included from 15 to 28 trials, consistently show lower mortality in CGA patients in a variety of settings. Patients assessed using a CGA show overall mortality rates of 30% less than those not assessed by CGA. These studies provide evidence of the benefits of CGA in terms of reducing mortality.

1.2.2.2 PHYSICAL FUNCTIONING

The second benefit of CGAs is related to physical functioning, specifically the ability of elderly persons to perform activities of daily living (ADLs) as well as instrumental activities of daily living (IADLs). ADLs are usually based on the patients' autonomy in eating, bathing, dressing, ambulating, transferring from bed to chair, toileting, self-medication and continence. IADLs cover tasks that require a finer level of coordination and cognition, such as autonomy in housekeeping, cooking, shopping, lifting objects, using the telephone and financial management. In their extensive review of more than 1000 home care agencies in the US, researchers from the Centre for Health Policy at Denver University found that improved physical functioning as measured by ADLs or IADLs was amongst the benefits most frequently shown in home care patients (Shaughnessy, Crisler & Kramer, 1989). They argued that maintaining or improving performance in ADLs or IADLs is the most important benefit to target when performing needs assessment and allocating home care services (Branch & Meyers, 1987).

The relevance of measuring physical functioning has therefore driven researchers to develop scales that are specifically adapted for elderly people. In the CGA reviewed in preceding sections, physical functioning is generally assessed using items from the Index of Independence in Activities of Daily Living, most commonly referred to as the Katz Index of ADL (Katz et al., 1963; 1970), and from the Physical Self-Maintenance Scale (Lawton & Brody, 1969).

The former was developed to measure physical functioning in strokes and total hip replacement patients whereas the latter was developed to evaluate treatment in people over 60 years of age living in institutions or in the community.

The Katz Index of ADLs is one of the earliest and best-known measures of functioning in elderly patients to date (Bowling, 1991, 1995; McDowell & Newell, 1987; Streiner & Norman, 1995; Wilkin, Hallam & Dodgett, 1992). Although the face and content validity of the Index of ADLs are unquestioned, initial inter rater reliability estimates showed disagreement between raters in almost 20% of the items. However, in a more recent study (Asberg, 1987) the inter-rater agreement (using the Kappa coefficient) was higher (generally above 0.65 for all items).

Katz and his colleagues (1963; 1970; 1992) have demonstrated that level of functioning in ADLs is associated with improvement in rehabilitation, hip fracture and stroke patients. Brorsson and Asberg (1984) showed that low scores are related to higher mortality. These studies provide good support for the psychometric properties of the Katz Index.

The other widely used ADLs scale is the Physical Self-Maintenance Scale, developed by Lawton and Brody in 1969. It was initially designed to measure daily living skills and measures levels of independence in six domains of daily living: toileting, feeding, dressing, grooming, physical ambulating and bathing. Ratings are made by staff members on a variety of observable behaviours, with response categories ranging from total independence to

dependence. The reliability of the scale has been established by the authors (Lawton & Brody, 1969). Ratings between two independent nurses of 36 patients showed Kappas of 0.87 and between two research assistants showed Kappas of 0.91. Validity was also shown by moderate correlations between the scale and physician rating (r= 0.62). Correlations between the scale and a measure of mental health were lower (r =0.38), demonstrating discriminant validity.

As shown in Table 3, the link between physical functioning and CGA ADLs or IADLs was evaluated in half of the 14 trials and in one of the three meta-analyses. Of the seven individual trials, the majority (including two in home care, one in outpatient and one in geriatric unit settings) reported improvements (Applegate et al., 1990; Fabacher et al., 1994; Karppi & Tilvis, 1995; Rubin et al., 1993) but three (including one in an outpatient setting and one in a geriatric unit) did not (Reuben et al., 1995; Siu et al., 1996; Thomas et al., 1993). Stuck et al.'s (1993) meta-analysis showed that patients admitted using a CGA reported better improvement in ADLs and IADLs compared with controls. These studies are discussed in more details below.

Fabacher and colleagues (1994) used the Instrumental Activities of Daily Living Scale (Lawton & Brody, 1969) to evaluate whether more improvement in ADLs and IADLs was associated with CGA in elderly veterans in California. One group was assessed using a CGA (n= 131), whereas the other received regular geriatric care (n= 123). At one-year follow-up, ADL scores were similar between groups (5.8 vs. 5.8 ; $p > 0.05$) but IADL scores were significantly higher for patients assessed by CGA than those in the control group (7.1 vs. 6.7 ; $p \leq 0.05$).

Overall, participants in the intervention group maintained their IADLs (mean change -0.20 : p=0.37) while controls experienced a statistically significant decline (mean change -0.60 ; $p \leq 0.05$). As this study involved mainly men with high socio-economic and educational status, results may not be generalisable.

Karppi and Tilvis (1995) performed a trial to determine if functional status could be improved by the use of a CGA in an aged sample of community dwelling Finnish patients. Three hundred and twelve patients were assigned to either an intervention group (n= 104) where patients were assessed using a CGA before home care or to a control group (n= 208) which receive usual home care. ADLs were measured at three months using the Katz Index (Katz, 1963) and IADLs were measured using the Instrumental Activities of Daily Living Scale (Lawton & Brody, 1969). A significantly higher percentage of patients in the intervention group experienced a positive ADL change than did controls (42.9% vs. 24% ; $p \leq 0.01$). Similar findings were observed for IADLs (34.7% vs. 19.3% ; $p \leq 0.05$). The intervention patients showed significantly better improvement in both aspects of physical functioning. The authors did not report whether the type of care received during follow-up differed between groups.

Applegate and colleagues (1990) performed a RCT of 155 elderly hospital patients in a geriatric unit in California. One group was assessed with a CGA (n= 78) whereas the other group was assessed by different professionals with usual investigations (n= 77). ADLs were assessed at entry and 4-month after admission. Results at 4-month follow-up showed that patients assessed using a CGA reported more improvement in functional status as measured by

ADLs on the Katz Index than did controls in scores (p= 0.01). As in Karppi and Tilvis' study (1995), the authors did not report if any patient characteristics or if the type of care received during follow-up differed between groups or related to improvement.

Reuben et al. (1995) conducted a large randomised clinical trial of 2278 hospitalised patients 65 years of age or older who showed low ADL and IADL scores at entry. One group of patients was admitted using a CGA (n= 1016) and another group using regular procedure (n= 1217). Results show that at baseline, 3- and 12-month follow-up, Katz Index scores of both groups increased in a similar pattern. Results were statistically similar at all points in time ($p > 0.05$). All patients were admitted for a long-term placement.

As other studies have shown that ambulatory patients benefit most in terms of ADLs and IADLs, it may be that patients with such poor functioning do not improve sufficiently to show differences in functioning even after a 3 or 12-month follow-up.

Siu and his colleagues (1996) performed a different kind of study evaluating the comparative benefits of a short form CGA against a longer one. Their study involved 354 elderly homebound patients newly discharged from a Californian public hospital who were randomly assigned to an intervention which was exposed to a short form CGA (n= 178) or a control group (n= 176) exposed to a usual but longer form.

Table 3: Studies evaluating the impact of CGAs[1] on physical functioning

RCT	Study design	Setting	*n*		Outcomes	
			Cases	Controls	‡ =p≤0.05	† =p>0.05
Applegate et al. (1990)	RCT	GU[2]	78	77	↗ functional status ‡	
Fabacher et al. (1994)	RCT	HC[3]	131	123	↗ IADLs ‡	
Karppi & Tilvis (1995)	RCT	HC	104	208	↗ IADLs ‡	
Reuben et al. (1995)	RCT	GU	1016	1271	No changes (3 or 12 months) ADLs†	
Siu et al. (1996)	RCT	OPC[4]	178	176	↗ Physical functioning (part of HRQOL) †	
Stuck et al. (1993)	Meta-analysis	ALL[5]	4959	4912	↗ Physical functioning at 6+12 months † Home care (OR=1.63 at 6-month; OR= 1.72 at 12-month follow-up)‡	
Thomas et al. (1993)	RCT	HC	62	58	Trend ↗ ADL	

1 All studies used tailor-made CGAs
2 GU Geriatric unit
3 HC= Home care
4 OPC= Out-patient clinics
5 ALL := all settings combined

After adjusting for baseline characteristics, Siu et al. measured physical functioning using the Katz Index of ADL at 30 and 60 days. Although improvements were observed in both groups at the two follow-up assessments, there were no significant differences between groups on the SF-36 physical functioning or role functioning - physical dimensions. Authors concluded that although physical functioning improved in both groups, it appears to be unaffected by a short CGA. Because of the nature of this study which was the first known to compare two forms of CGAs, the conclusions to be drawn cannot be addressed in terms of the benefits of using a CGA or not. These results rather show that it is unlikely that a shorter form of CGA is less beneficial than a longer one.

Thomas and colleagues (1993) evaluated the effectiveness of in-home geriatric assessments as a means of improving health and functional status in community-living elderly residents in North Carolina. They also used the Katz Index of ADL to measure physical functioning at baseline and at 4-month follow-up in an intervention group of patients (n= 62) who were assessed using a CGA and in a control group of patients who were admitted using regular procedures (n= 58). A marginally significantly higher percentage of experimental patients showed improvement in ADL scores (22%) than did control patients did (7% ; p= 0.07). Although the trend towards improved functional status in the intervention group, the marginally significant findings may be due to the relatively small number of participants. As in Reuben's study (1995), it could also be argued that CGAs show benefits in patients who, because of their initial functional status have the greatest chances for improvement.

The only meta-analysis which examined functional status (Stuck et al., 1993) pooled 28 of 4959 subjects allocated to CGAs and 4912 controls. Pooled results did not indicate a significant improvement in physical functioning (*OR*: 1.10 ; *CI* : 0.89-1.36). However, when results were re-analysed according to type of settings, it was shown that patients from home care benefited the most from CGA both at the 6-month (*OR* : 1.63 ; *CI* : 1.00-2.65) and 12-month (*OR*: 1.72 ; *CI* : 1.06-2.80) follow-up.

As with the studies of mortality, results from these meta-analyses investigating the benefits of CGA in terms of functional status measured using standardised instruments of ADLs or IADLs are inconsistent. In individual trials CGAs appear to be beneficial to home care patients ; two studies out of three showed significant improvements in patients' functional status over time, whereas only one study out of three in geriatric unit settings showed benefits associated with CGA. The meta-analyses also showed that home care patients benefited most from the use CGAs.

Furthermore, it appears that even if benefits in physical functioning are associated with the use of a CGA, the form of CGA does not seem to be associated with differential benefits to patients. However, some studies are limited due to and follow-up periods which may have been too long to detect benefits as it is well known that declines in physical functioning might be simply due to the passage of time.

1. 2.2.3 PSYCHOSOCIAL FUNCTIONING

Psychosocial functioning is a broad concept that focuses on the psychological and the socio-affective aspects of well-being and the ability to communicate with others and to seek support or help if needed. It may also include an assessment of the impact of cognitive functioning (e.g. memory, orientation, confusion) or possible organic disease on daily functioning and on the ability to maintain significant relationships with others. There is considerable agreement about the aspects that are specific to elderly people. These include depression that have consistently been found to be predictor of overall HRQIOL (Anderson, 1995; Bruce et al., 1994; Diamond, Holroyd, Macciocchi & Felsenthal, 1995; Cress et al., 1995; Hayslip, Galt, Lopez & Nation, 1994), the capacity for adapting to change and the ability to relate to others.

The specific domains that are recommended to be considered in psychosocial functioning (Kane & Kane, 1987) relate to social relationships (frequency and the context in which they take place), participation in social activities (frequency and nature) and the presence, availability and satisfaction with social support (kind of help received and expected). Rubenstein and his colleagues (1989: p.87) have pleaded that research is " challenged to select valid and reliable measures that will help understand patient's psychosocial functioning without becoming encumbered by details that cannot be easily collected, accurately interpreted or practically used in geriatrics ". There is no unique scale that measures such a complex domain. Rather, there are sets of questions or multiple instruments that have been developed in order to capture

dimensions of social functioning that are relevant for certain groups of patients at a certain time in their lives.

In the 14 studies reviewed, only one RCT in an outpatient unit and one of the three meta-analyses looked at the benefits of CGAs on psychosocial functioning. These studies are described below and shown in Table 4.

The only trial that examined psychosocial functioning was by Silverman and colleagues (1995). They evaluated psychosocial benefits in elderly patients and their caregivers exposed to CGA (n= 239) which consisted in a thorough examination compared with control patients and caregivers (n= 203) who had been admitted using regular and shorter procedures. Patients were followed-up on one-year. Cognition was measured the Mini-Mental State Exam (MMSE; Folstein et al., 1975) and the Clinical Dementia Rating Scale, (CDRS; Berg, Hughes & Coben, 1982). Depression and anxiety in caregivers were measured using specific sub-scores in the Diagnostic Interview Schedule (DIS; Helzer & Robins, 1988). At one-year follow-up cognitive function as measured on the MMSE (3% vs. 1.7% improved; p >0.05) or the CDRS (12% vs. 10.9% improved ; p >0.05). Depression and anxiety in caregivers were lower in the experimental group but not statistically different from controls (depression = 6.7% vs. 6.1%; p >0.05; anxiety = 12.2% vs. 5.5%; p >0.05).

Table 4: Studies evaluating the impact of CGAs[1] on aspects of psychosocial functioning

RCT	Study design	Setting	*n*		Outcomes	
			Cases	Controls	‡ =p≤0.05	† =p>0.05
Silverman et al. (1995)	RCT	OPC[2]	239	203	↗ cognition MMSE † ↗ cognition CDRS † ↘ depression in caregivers DIS † ↘ stress in caregivers DIS†	
Stuck et al. (1993)	Meta-analysis	ALL[3]	4959	4912	↗ cognition at 6 months all settings combined ‡ Geriatric unit setting‡ Outpatient settings †	

1 All studies used tailor-made CGAs

2 OPC= Out-patient clinics

3 ALL = all settings combined

These findings suggest that CGA is not associated with greater improvement in psychosocial function for patients or caregivers. However, as authors have not reported the use of any additional analyses looking at the potential confounding effect of the care received, findings from this study still give only a partial view of the real influence of CGAs. Although the authors acknowledge this limitation, this finding is still in accord with the literature suggesting that CGA is most effective when paired with rigorous care plans.

The only meta-analysis was performed by Stuck et al. (1993). Data were pooled from 8 of the 28 RCTs examining cognitive function. Findings at 6-month follow-up confirmed that cognitive function was better in all of the intervention groups combined (*OR*= 1.41; *CI*= 1.12-1.77). When studies were pooled according to types of setting, then, the odd ratios in institutional geriatric units were still in favour of intervention groups (*OR*= 1.79; *CI*= 1.32-2.42), whereas in outpatient units the odd ratio were not significant (*OR*= 1.03; *CI*= 0.73-1.46). Overall, these results confirm that CGAs are beneficial to patients in terms of cognitive functioning. CGAs appear to be more beneficial for patients in hospital than for those requiring community or outpatient care.

One of the problems in this meta-analysis is that cognitive function was not assessed using the same instruments in all studies. This limits the weight to be ascribed to such results and highlights the need for studies that investigate psychosocial functioning using standardised instruments.

1.2.2.4 HEALTH-RELATED QUALITY OF LIFE

Perceived health-related quality of life (HRQOL) is increasingly considered to be a useful indicator of the overall physical and psychosocial functioning of the elderly adult (Abeles, Gift & Ory, 1994). Given that the hallmark of home care for elderly patients is the management of physical and psychosocial problems in order that general functioning and perceived HRQOL are compromised as little as possible (Kane & Kane, 1987), HRQOL has been increasingly singled out as a significant outcome of home care programmes in the elderly (Abeles et al., 1994). This is mainly due to the fact that HRQOL is a multidimensional concept compatible not only with patients' expectations of remaining at home and enjoying life as long as possible, but also with the objectives of home care programmes. It has been suggested that a multidimensional HRQOL measure should assess global dimensions, such as satisfaction with present conditions, internal subjective states (such as perceived health and well-being, energy, fatigue, self-esteem, and sense of mastery), ability to function cognitively, physically and socially, as well as the ability to perform usual daily and self-care activities (Abeles et al., 1994). From the studies reviewed, only two trials evaluated HRQOL as outcome of CGA (Pathy et al., 1992; Siu et al, 1996). They are discussed below and shown in Table 5. None of the three meta-analyses investigated HRQOL as an independent concept.

Pathy et al's. (1992) trial focused on problem identification in a general practice in South Wales, UK, using a CGA in 369 intervention patients who were

assessed using a CGA by a specially appointed nurse. The 356 controls had no standardised questionnaires and no contact with that trained nurse. After three years, 223 intervention patients and 196 controls were still registered in the study and completed the Nottingham Health Profile. Although there was no differences between groups on the overall scores on the NHP, a single item – 'self-rated health' was higher in the intervention group (mean score 6.9; *SD* 2.9) than in the control group (mean score 6.4; *SD* 2.9). The comparative analyses revealed a significant difference in change over time between groups in this item (difference 0.5; *CI* 0.2-0.8; $p \leq 0.05$).

Although the authors focus on this significant difference in favour of intervention group, the major problem with this study concerns the length of the follow-up period. Considering that the sample of elderly patients had a mean age of 73.5 years at entry and knowing that HRQOL decreases with age (Ware, 1994), it may be that improvements in HRQOL were masked de to the simple passage of time (maturation bias). If a shorter period of observation than 3 years had been used, it might have been more possible to detect improvement in other aspects of HRQOL.

Siu et al. (1996) analysed the comparative benefits of two forms of CGAs in inpatient settings. In their study, 354 patient aged 65 years and over were randomly assigned to an intervention that consisted of a short CGA at hospital discharge and at home (n= 176) or to a control group who received a longer of CGA at home (n= 178).

Table 5: Studies evaluating the impact of CGAs[1] on health-related quality of life

RCT	Study design	Setting	*n* Cases	*n* Controls	Outcomes ‡ =p≤0.05	Outcomes † =p>0.05
Pathy et al. (1992)	RCT	HC[2]	369	356	↗ HRQOL (NHP[3]) †	
Siu et al. (1996)	RCT	HC	178	178	↗ HRQOL (SF-36) †	

1 All studies used tailor-made CGAs

2 HC= Home care

3 Nottingham Health Profile

This is the only study to have measured HRQOL using the eight dimensions of the SF-36. The authors reported improvement in both groups at 30 and 60 days after assessment. However, the differences not statistically significant The authors reported HRQOL results for the eight SF-36 dimensions scores but not for physical or mental component summary scores. As this study is comparing two forms of CGAs with no control groups, improvements in HRQOL cannot be ascribed to the use of CGAs.

It would be accurate to say that the only trial involving CGA and a control group (Pathy et al., 1992) has not demonstrated the benefits of CGAs on measures of HRQOL. The only other trial which examined HRQOL as a specific outcome was comparing two forms of CGAs without a control group (Siu et al., 1996) but interestingly, results showed improvement in both groups. Amongst all the other trials reviewed previously, authors preferred to use individual dimensions such as functional status and psychosocial functioning on their own. This suggests the need for further studies to examine HRQOL using reliable and valid multidimensional instruments as outcome of CGA in elderly populations.

1.2.2.5 SERVICE USE

CGAs have been shown to be associated with several benefits in terms of service use. Twelve of the 14 trials and one of the three meta-analyses which investigated service use concluded that CGAs are associated with benefits such as: decrease in medication use, the use of medical and hospital

services (especially in emergency care and in length of stay in hospitals or nursing homes) and in the probability of long term placement. These studies are discussed below and summarised in the next Table 6.

As concerns specific findings from individual trials, Fabacher et al., (1994) who have examined if CGAs were beneficial in helping community living elderly veterans using less services, reported that at twelve months after assessment, there was a significant difference in the pattern of over the counter medication usage. The intervention patients (n= 131) decreased their use over time whereas control patients (n= 123) increased it (-0.11 vs. +1.1; $p \leq 0.05$). When comparing the intervention group to the controls at 12-month follow-up, they also found that the intervention group had slightly but significantly fewer prescribed medications than controls (2.0 vs. 2.3; $p \leq 0.05$). In the study patients, while at admission immunisation rates (influenza and pneumococcal vaccination) were statistically similar in both groups (13% vs. 21% ; $p > 0.05$), after 12 months, immunisation rate was significantly higher in the intervention group (94% vs. 34%; $p \leq 0.05$). As concerns hospitalisation, the proportion of patients who were hospitalised during a year of follow-up, although slightly lower in the intervention group, it was found to be statistically similar between groups (22% vs. 24.2% ; $p > 0.05$). Finally, as concerns long term placement, the results show that no patients from either groups were admitted in nursing homes during the study follow-up. Therefore, results from this study show that the significant benefits were in terms of lower use of over-the-counter drugs and higher immunisation rate.

PAGE
MISSING IN
ORIGINAL

Table 6: Studies evaluating the impact of CGAs on service use (cont')

Studies	Design	Setting	*n*		Outcomes	
			Cases	Controls	‡ =p≤0.05	† =p>0.05
Thomas et al. (1993)	RCT	HC[1]	62	58	↘ number of readmissions in hospitals ‡	
					↘ LOS in hospital †	
					↘ number of visits to physicians †	
					↘ referral to community services †	
Boult et al. (1994)	RCT	OPC[2]	43	111	↘ number of visits to emergency care ‡	
					↘ number of days in hospitals or nursing homes †	
Epstein et al. (1990)	RCT	HC	181	208+201	↘ placement †	
					↘ LOS hospital †	
					↘ visits to physicians ‡	
Silverman et al. (1995)	RCT	OPC	239	203	↘ visits to emergency †	
					↘ LOS hospital †	
					↘ visits to physicians other providers †	
Lederset et al. (1994)	RCT	GU[1]	52	54	↘ LOS hospital ‡	

[1] HC= home care
[2] OPC= outpatient cllinic

Table 6: Studies evaluating the impact of CGAs on service use (cont')

Studies	Design	Setting	*n*		Outcomes	
			Cases	Controls	‡ =p≤0.05	† =p>0.05
Applegate et al. (1990)	RCT	GU[2]	62	58	↗ number of living at home at 6-month ‡	
					↘ LOS in hospital at 1-year †	
					↘ LOS in nursing homes at 1-year ‡	
Germain et al. (1995)	RCT	GU	25	52	↘ LOS in hospital ‡	
					↗ number of living at home ‡	
Miller et al. (1994)	RCT	GU	78	74	↘ LOS nursing homes at 6-week ‡	
					↘ placement at 6-week, 6-month , 1-year ‡	
Stuck et al. (1993)	Meta-analysis	ALL[3]	4959	4912	↗ number of living at home at 6-month ‡	
					↘ readmission in hospital at 6-month ‡	

[1] GU= geriatric unit
[2] GU= geriatric unit
[3] ALL= all settings combined

However, one of the limitation of the Fabacher et al. study certainly relates to the sociodemographic profile of the participants who were mainly males (97.6%), well educated (56.5% of the intervention and 69.1% of the controls had completed a college or post-graduate degree), and because of their veteran status, had regular and substantial incomes (50% earn more than 25,000US$/year). Therefore, as previously discussed, these results might not be valid for generalisation to all population.

Then, Karppi et al.'s (1995) study mainly focused on service utilisation patterns in elderly community patients. During the two year follow-up, they looked at several service aspects such as: the use of medical services (visits to physicians and physicians visits to home), the number of visits to outpatient units, the number and the overall length of stay in hospitals, the number and length of stays in nursing homes, the number of visits to day care centres, the number of home visits by nurses and the number of visits by home helpers. Of all the variables used to measure if service utilisation was different between groups, they have reported that only the number of days spent in hospitals during the first year of follow-up was significantly lower in the intervention group (n= 104) than in the controls (n= 208; 13.7 vs. 22.7; $p \leq 0.05$). Groups were similar, on all other service use indicators at both one and 2-year follow-up. However, exposure bias is a problem in that study. Patients in the intervention group were invited to be assessed in a geriatric unit where a complete CGA assessment was performed and a home care plan developed. This care plan was followed by the home care team. Patients in the control group were assessed by a home care nurse who interviewed patients using well validated instruments such as the Katz

Index, the Lawton and Brody Instrumental Activities of Daily Living, the Short Portable Mental Status Questionnaire and the Zung Self-Rating Depression Scale. Therefore, although this study is presented as an RCT with an exposed and non-exposed group, the fact that control patients were comprehensively assessed at entry using highly reliable instruments that are frequently used as parts of CGAs suggests that the assumption that the control group is non-exposed is questionable. In fact, it could be argued that this study compared two forms of CGAs. This could explain the lack of added benefits due to the use of CGAs as it appears that some forms of CGAs were used in both groups.

Pathy and colleagues (1992) examined patterns of medical, hospital and community service use for elderly Finnish patients assessed with either a CGA (n= 273) or the usual procedures (n= 252). Although hospitalisation rates during follow-up were similar in both groups, the mean length of stay was significantly shorter in the intervention group (difference of 4.6 days ; $p \leq 0.01$). For the small number of patients referred to the geriatric day hospital, the mean number of referrals was significantly lower in the intervention group compared to controls (difference of 18 referrals ; $p \leq 0.01$). The proportion of elderly patients receiving home care visits by hospital specialists was also significantly lower in intervention group than in controls (difference of 12.9% ; $p \leq 0.01$). When stratifying based on age (65 to 74 and ≥75), intervention patients in both strata had fewer visits to physicians than controls with the mean number of home visits by physicians lower in patients aged 65 to 74 (0.7 vs. 2.9 ; p= 0.02). This study highlights the value of CGAs in reducing service use. Results show that the

costs to general practice screening and nurse surveillance are offset by savings in hospital costs.

Thomas et al (1993) measured length of stay in hospital, number of visits to physicians, referrals to community services and hospital readmissions during a 6-month follow-up. Results were similar for experimental and control patients in three of the four outcomes measured. Length of stay in hospital (9.0 days vs. 10.1 days ; $p > 0.05$), number of visits to physicians (3.5 vs. 4.6 ; $p > 05$) and referrals to community services (0.6 vs. 0.3 ; $p > 0.05$) were similar in both groups. However, the number of hospital readmission was significantly lower in experimental patients than in controls (0.3 vs. 0.5 ; $p \leq 0.05$).

Boult et al. (1994) performed a 17-month RCT in a community-based outpatient geriatric evaluation and management unit in Minnesota. They studied service utilisation in elderly patients who were at high risk of hospitalisation as identified through medical screening. Forty-three elderly patients were assessed using a CGA and 111 received usual care. They found that elderly homebound patients in the intervention group had fewer visits to emergency care at follow-up than controls (2.9 vs. 19.2 ; $p = 0.03$) but similar use of hospital (9.0 vs. 14.2 days ; $p = 0.30$) and nursing homes (4.7 vs. 3.8 days ; $p = 0.98$). Although, between group differences nursing home use were not statistically significant, authors interpreted the relatively higher use of nursing homes in the intervention group as due to the fact that respite care was used as an integrative part of the care plan derived from CGAs. As in most of other studies, this study did not

evaluate whether other packages of care received during home care acted as confounders between CGA and benefits.

Epstein et al. (1990) conducted a trial to evaluate the benefits of CGA in a health maintenance organisation in Rhode Island. In order to determine whether any differential CGA-associated benefits were related to the unique features of the assessment rather than the simple provision of extra medical attention, patients were randomised into three groups. Patients in the control group consulted a physician only (n= 208). Those in the second group consulted a physician and were referred to another physician for a second opinion (n= 201) while those in the experimental group were referred to CGA assessment by a multidisciplinary team (n= 281). The service utilisation outcomes measured one year after randomisation were : nursing home placement, visits to physicians and hospitalisation. In experimental, extended medical care or control groups, there were no significant differences in placement (2.7% vs. 2.4% vs. 3.4% ; $p > 0.05$) or hospitalisation (22% vs. 20% vs. 20% ; $p > 0.05$). However, the number of visits to physicians was higher in both the extended medical care and control groups than in experimental patients (8.7 vs. 10.8 vs. 9.7 ; $p \leq 0.05$). Results suggest that CGAs have no significant benefits other than decreasing the number of visits to physicians. The authors claim that this is an important cost benefit given the structural payment system in an American Health Maintenance Organisation.

Silverman et al. (1995) trial in a Pennsylvanian elderly outpatients unit, fail to show differences between groups on several measures of service use at 6-

and 12-month follow-up. They found no statistically significant difference between the experimental and control groups in the number of placements (0.9% vs. 1.5% ; $p > 0.05$). The number of visits to physicians and other health care providers, the number and length of hospitalisations and the number of emergency room visits were also similar between groups. Results of this study do not, therefore, support he benefits of CGA patients in terms of service use. However, as service use was not the main focus of the study, and as no figures are reported on the majority of the variables included in the examination, it is difficult to perform a critical appraisal on these results.

Lederset and colleagues (1994) performed a RCT in the Parisian region in France. Their working hypothesis was that the introduction of a CGA would reduce the overall length of hospital stay in elderly patients hospitalised for the first time for minor acute conditions, and eliminate a 'bed blocking' effect due to a lack of collected-at-entry information that is needed for early discharge. They assessed 52 elderly patients at entry with a CGA whereas 54 received usual admission procedures. Length of stay at discharge, controlled for patient characteristics such as sex, age, socio-economic status, ADLs, IADLs, presence of social support and medical diagnosis, was significantly lower in the experimental group than in the controls (1.1 vs. 5.1 days ; $p= 0.02$). After chart review by a medical team composed of two geriatricians and a physician, authors report that a significantly lower proportion of elderly patients in the experimental group had a medically unjustified prolongation of stay (10% vs. 28% ; $p= 0.02$).

PAGE
MISSING IN
ORIGINAL

the use of a CGA can decrease length of hospital stay and increase home instead of institutional placements.

Miller et al. (1994) used the sample of patients in the Applegate et al.'s (1990) RCT. In that study, the intervention consisted in a CGA and care (n= 155) compared to usual medical assessment and care in the controls (n= 58). Miller and colleagues followed patients for one year to measure two aspects of service use : nursing home use and placement. The use of nursing homes facilities was measured at three points during follow-up. At the 6-week follow-up, a significantly lower percentage of experimental patients who had been admitted either to medical-surgical (14% vs. 44%, p= 0.01) or rehabilitation ward (10% vs. 33%, p= 0.01) used nursing homes facilities. At the 6-month follow-up, the percentage of users was significantly lower in patients admitted in rehabilitation wards (18% experimental vs. 40% controls, p= 0.02) but was similar for those in medical or surgical wards (24% experimental vs. 48% controls, p= 0.06). At 12-month follow-up, the percentage of experimental patients who had been admitted to nursing homes was significantly lower in rehabilitation (18% vs. 44%, p= 0.01) but similar for patients admitted to medical or surgical wards (31% vs. 52%, p= 0.11).

In the Miller et al. (1994) study, significant differences in favour of the experimental group were found at the three points in time for patients admitted in the rehabilitation ward only (6-week : 10% vs. 34% ; p= 0.03 - 6-month : 10% vs. 45% ; p= 0.003 – 12-month : 20% vs. 45% ; p= 0.05). These results show that better outcomes are observable in CGA patients who have an identified

rehabilitation status. Those who have a predominant medical or surgical profile are less likely to improve due to the use of CGAs.

Only one meta-analysis by Stuck et al. (1993) evaluated the benefits of CGA intervention on service use, defined as placement and hospitalisation. Results showed that CGAs had an overall favourable effect on living at home at six months (OR: 1.26 ; *CI*: 1.10-1.44). Three sub-groups of patients were shown to have particularly benefited from CGA : those from geriatric units (*OR*: 1.47 ; *CI* : 1.13-1.90), in homes (*OR*: 1.19 ; *CI* : 1.01-1.39), or in outpatient facilities (*OR*: 1.49 ; *CI* : 1.12-1.98). The analysis of hospitalisation rates based on pooled trials demonstrated that CGAs significantly reduced hospital admission during follow-up by 12%. Odd ratios indicated that patients who benefited the most from a CGA were those who were assessed in home care (*OR*: 1.24 ; *CI* : 1.01-1.39). This meta-analysis is particularly convincing because of the large number of patients included in both the exposed (n= 4959) and non-exposed groups (n= 4912) and also due to the consistent results across settings.

Therefore, the most important findings from these studies relate to the fact that CGAs are associated with reduced length of stay in institutions and reduced number of long term placements. Findings from the majority of the trials and from the meta-analysis strongly suggest that these benefits can be ascribed to patients exposed to CGAs. As concerns visits to physicians or referral to outpatient or community services, the results are less consistent but at least three studies (Pathy et al., 1992 ; Boult et al., 1994 ; Epstein et al., 1990) provide supporting evidence in favour of CGAs. Furthermore, even if some of the results

may not be completely generalisable due to sampling or exposure bias, the majority of the studies have used rigorous methods of investigation and lead to results that are generally in favour of CGAs.

1.2.2.6 GENERAL CONCLUSION ON THE EFFECT OF CGAs

The majority of the studies reviewed show significant benefits associated with CGAs, either in terms of improved survival, improved functioning or reduced service use. Findings about the benefits of CGAs on psychosocial functioning and health-related quality of life are less convincing. However, it should be pointed out that as the only study which evaluated psychosocial functioning and health-related quality of life in exposed and unexposed patients (Pathy et al., 1992) did not used a 'gold standard' measure of HRQOL, the findings are tenuous.

It is also important to consider that one of the characteristic of CGAs is that they are designed for two interrelated purposes : firstly, to determine needs in the physical, psychosocial and illness profile of elderly persons using standards of functioning ; and secondly, to design a comprehensive plan for nursing, medical, social or rehabilitative care based on available resources. The literature shows that CGAs are associated with benefits in settings where the members of the assessment team are also involved in developing the care plan, establishing the expected outcomes and monitoring the patient's condition over time. Whenever this is not the case, associations seem to be weaker or even absent (Rubenstein et al., 1995). As none of the CGA studies have examined

whether there are differences care planning or care packages offered during follow-up or in structural characteristics (such as budget or staff mix), whether such differences could interact or modify the relationship between CGA and most important goals for elderly patients is still unknown. This uncertainty has led to what have been referred to in the literature as 'black box' effects (Applegate et al., 1991; Burns, 1994; Mark, 1995).

While the care provided during follow-up can be measured by the number of visits allocated per day, week or month or by the specific types of care received from different health professionals as part of care packages, these have not been evaluated in any of the CGA studies reviewed. This is one of the most important limitations as it is not known whether experimental or control patients received similar care packages or whether the care they received was associated with, masking or enhancing benefits measured using a large variety of outcomes.

Therefore, the lack of studies examining HRQOL or examining the co-explanatory effect of care received on improvement in different aspects of functioning points to the need for studies which examine these aspects. Furthermore, before drawing final conclusions about the real effectiveness of using a CGA in home care and its generalisability, there are other limitations to be considered. First, even if benefits of CGAs have been demonstrated, a large number of studies assess benefits only on the basis of reduced mortality. Whereas there is good evidence for lower mortality, more generic outcomes are now being more preferred to mortality. According to Ware (1995), research

efforts should shift from a focus on clinical endpoints such as mortality to more generic outcomes such as physical functioning, quality of life and general well being. In geriatrics, the previous emphasis on indicators such as mortality and morbidity is being increasingly replaced with "a greater awareness of the possibilities for measuring quality of life indicators for elderly patients" (Kind, 1988; p.21). Furthermore, specifically for home care elderly patients, HRQOL is argued to be a more relevant outcome than quantity of life (Long et al., 1993; Day, 1987). A quality of life paradigm should therefore be adopted in future research. Despite the number of RCTs reviewed, too few studies to date have looked at comprehensive HRQOL measures as benefits of CGAs in home care elderly patients.

Second, as studies have investigated the benefits of CGA using different forms of tailor-made CGAs for which no adequate information is given, it is difficult to assess their comparability. The raising question is whether the CGAs used in these trials are equivalent. It is not known whether a more comprehensive or a shorter form of CGA are is equally effective. The only trial (Siu et al., 1996) which compared two forms of CGAs in an outpatient setting showed no differences between groups. However, given the fact this is the only study which has examined the benefits from different CGAs, the question of comparative benefits of longer or shorter forms of CGAs remains.

Third, the majority of studies are based on a single CGA applied in a single setting often using highly targeted samples of patients, thereby limiting generalisability. The comparative benefits of the same CGA in different settings

or the comparative benefits of different CGAs in similar settings have not been fully examined. Hence, the question of which is the optimal CGA in a specific type of setting also remains.

There are, therefore, several questions that need to be addressed. Are CGA procedures associated with HRQOL as benefits in elderly home care patients ? Are long vs. short CGA associated with HRQOL benefits ? Does the specific type and intensity of care during follow-up influence the relationship between CGA and patient outcomes ? Do other characteristics of care such as staff mix or budget influence the relationship between CGA and outcome ? These gaps in the literature point to the need for further study of CGAs. This is particularly true when CGAs have been evaluated individually rather than comparatively in settings where both structural and process characteristics differ.

Also, although RCTs are widely accepted as the best way to evaluate interventions, these are not always feasible. This is especially true if the objective of a study is to compare the impact of different CGAs used in settings which may differ in terms of process or structural variables, or in which variations in human and financial resources and administrative procedures may significantly affect outcomes. Observational studies may be appropriate in situations where the context in which a study takes place is an important variable to consider (Black, 1995). As specifically concerns CGAs, it has been argued that comparisons between different CGAs across sites should be performed using cohort studies in order to follow patients in different environments (Borok

et al., 1994). The rationale for this study is based on findings and limitations of previous studies of the effect of CGAs on outcomes.

1.3. HOME CARE SERVICES FOR ELDERLY PEOPLE IN QUEBEC

Quebec is a francophone province in Eastern Canada. The total 1996 population is estimated at 7,396,742, of which 11.2% are 65 years and over. The proportion of people 65 years and over is somewhat lower in Quebec than in the rest of Canada (11.6%), Sweden (18.1%), Italy (14.9%), France (13.8%) and the US (12%; Pelletier, 1996). However, the slow growth of the Quebec population over the last two decades suggests that the proportion of elderly people will rise to 20% in about 15 years (Gouvernement du Québec, 1991). An ageing population will continue to put increasing pressure on the system to expand the home care services provided for elderly people. In 1992 about 10% of the provincial health care budget was spent on home care services. Along with the long term care sector, this is one of the few where there has been a significant budget increase since 1992 (Gouvernement du Québec, 1992a). Because of the increased demand for home care services and the limited resources allocated to home care services for the elderly in Quebec, there is pressure to re-examined the benefits of these services.

The health and social service system established in Quebec in 1970 has two broad objectives : (i) protect all citizens from the risks associated with illness and social problems regardless of income ; and (ii) improve public health indicators such as premature morbidity and mortality (e.g. morbidity and mortality

associated with cardiovascular diseases, road accidents, infectious disease, and the use of tobacco) and thereby improve the overall well-being of the population (Gouvernement du Québec, 1992b). However, despite universal access to health care and to social programmes, significant disparities remain in health and well-being between men and women, between different regions and between age-specific or socio-economic groups (Gouvernement du Québec, 1992b).

Home care services are delivered on a local basis through the 152 Centres for Local Community Services (CLSC) established in the Province between 1975 and 1985 to provide first level of health care. A CLSC's catchment area relates to population or geography. In urban areas where population density is higher, a CLSC covers a population of about 100,000 persons. In rural areas where density is low, CLSCs cover a territory of about 60 kilometres of diameter in size. The usual home care services that are available on an individual and home basis comprise medical, nursing and rehabilitative care, as well as social services and home help. In a vast majority of urban home care programs, geriatric day care centres are also available and offer different types of medical, nursing or rehabilitative care when elderly persons (even when receiving home care for specific conditions) are sufficiently mobile to receive more services on an ambulatory basis. Patients can be admitted to home care in different ways. They are most commonly referred (i) by a hospital liaison nurse on discharge from a specific ward ; (ii) by a physician from a private practice ; (iii) by the patient or a member of the family (or another type of caregiver) who is seeking help in the care to be delivered on a home basis. At the time of referral, an initial telephone interview is conducted by a nurse with the person who

requested the referral. If the need for an admission interview is confirmed, then a home visit is made according to the priorities set with the informant. The admission procedure can be performed as quickly as within hours (on a 24-hour basis) or at the longest within a few days (on a 7-day basis). Patients are only officially admitted to home care after a thorough and comprehensive needs evaluation is performed. Services are then determined by a multidisciplinary team on the basis of the needs uncovered, the availability of services and, when home help is concerned, with the patient's ability to pay.

In this study home care is defined using in part the definition given by the Centre for Health Services Research (Kramer et al., 1989: p.2). Home care therefore consists of health services provided in the patient's place of residence on a visit basis for purposes of promoting, maintaining or restoring health and reducing the detrimental effects of disease or disability on autonomy and HRQOL. This definition emphasises care at the individual patient level, and encompasses the range of services provided by community health nurses. Because co-ordinating all aspects of a patient's home care is the responsibility of community health nurses, care indicators pertain to the full range of home care services received by elderly patients.

1.3.1. THE MOST COMMON CGAs

Over the last decade in Quebec, CGAs to evaluate patient's need prior to admission to home care have proliferated in number and broadened in scope. In the early 1990s, new CGAs were adopted or developed by regional health

authorities. Although most include parts of well-known instruments (like the Katz Index), each CGA unique. The two criteria against which outcome instruments are chosen are practical usefulness and scientific soundness (Lamping, 1997). In the case of CGAs in Quebec, measures have traditionally been selected on the basis of practical rather than scientific criterion. The choice of CGAs therefore has typically been made on the basis of whether it is judged to be appropriate for the population being evaluated, simple to administer and feasible for routine use.

There are several differences among CGAs used in Quebec in terms of the number of domains they cover, the degree of comprehensiveness with which the needs of elderly persons are evaluated, and the time needed for completion. Are more comprehensive CGAs, which are longer and investigate more aspects of health dimensions associated with better outcomes than briefer and less intensive CGAs, or do they, by greater time-consumption and costs, simply place a heavier burden on health care personnel and home care programmes? This question was posed in a recent evaluation of home care programmes in Quebec, which estimated that between 1990 and 1992 over 100 needs assessment tools were being used at admission (Équipe de recherche, 1993). Basing their evaluation study on a thorough review of these tools, the evaluators argued that very few instruments encompassed the required domains or could be considered as CGAs. The evaluators also concluded that there is a need to compare CGA-type procedures that have recently become widespread in order to determine whether any marginal benefit can be ascribed to their use. Amongst all, two of

these CGAs are of particular interest for research because although widely used, their relative effectiveness has not been rigorously examined.

The first CGA, the *Évaluation de l'autonomie multiclientèle du programme de services à domicile* (Appendix A), comprises two parts. Part A is the well-validated *Système de mesure de l'autonomie fonctionnelle* (the acronym SMAF will be used throughout this document to relate to that CGA). It was developed by Hébert and colleagues at the Institute for Geriatric and Gerontological Research of the University of Sherbrooke (Hébert et al., 1988a; 1988b; Desrosiers et al., 1995). The SMAF is an instrument that was initially developed for measuring the needs of the elderly and the handicapped. The SMAF measures subject's performance on 29 functions using 85 items in five domains : physical functioning (ADLs and IADLs), psychosocial functioning (including life habits, mental health, social support), severity of illness, economic and housing conditions. Functional autonomy is measured on a four-level rating scale whereas the psychosocial functioning uses open-ended questions for measuring the presence and availability of social support. Each domain includes a section on service use at admission. The disability, handicap and psychosocial profiles obtained are then used for allocating home care services. The SMAF part is a 24-page questionnaire; the number of items used to assess each domain is presented in the next Table 7. In Part B, the longest section of the CGA, open-ended questions are used to investigate aspects of individual, family, and social adaptation.

The content validity of the SMAF was established on the basis of the World Health Organisation's (WHO) classification of impairments, disabilities and handicaps. Content was also validated in Quebec by experts in the field of gerontology by the means of two content validity studies (Hebert et al., 1988a; 1988b) using focus-groups approach. The number of dimensions covered and their relevance were then confirmed as fewer than 5% of items needed to be revised. A study of concurrent validity has also been carried out (Hebert et al., 1988a) and has shown good convergent validity between the disability index as measured by the SMAF and the amount of required nursing-care time (r=0.89).

Table 7: Domains and items covered by the two CGAs in Quebec

Domains covered	Number of items	
	SMAF	SF
Physical functioning	**31**	**13**
Lifestyle	10	3
ADLs	7	4
IADLs	14	6
Psychosocial functioning	**31**	**31**
Communication	3	*
Mental health	5	9
Anxiety-depression-cognition	8	12
Social support	15	10
Severity of illness	**5**	**3**
Economic aspects	**10**	**4**
Housing conditions	**8**	**5**
Service use	**	**10**
Total number of items	**85**	**66**

* = Descriptors assessed under severity of illness
** = Descriptors are assessed in each domain

Reliability were evaluated by internal consistency, test-retest and inter-observer using a sample of ninety subjects who were recruited in nine different residential settings ranging from home to long-term-care hospitals. Half of the subjects were randomly assigned to a condition in which they were assessed twice by the same nurse within a 2-week interval or twice by two different nurses within the same interval. Results showed good internal consistency (α=0.88) and intra-class correlation (ICC: 0.95 and 0.96 for the total scores on test-retest and inter-rater reliability, respectively). All ICCs were over 0.74 for all sub-scores for all types of reliability. The study results show that scores were not influenced by training and the nurses stated that the instrument was easy to administer. The authors concluded that the scale is highly reliable when used by evaluators in community or institutional settings.

The SMAF is usually completed by the admitting nurse during the first interview conducted in the patient's home. The SMAF is currently used in the three of the largest Regional Health Authority's home care programmes of the province, (i.e., Montréal-Centre, Laval and Montérégie). These three home care programmes admit over 30,000 patients to home care each year. Although the number of items covered by the SMAF is comparable to the four 'gold standard' CGAs described previously, the SMAF is considered to be a long form of CGA as it takes approximately 180 minutes to complete. The SMAF is reported to have been used as a measure of functional change in rehabilitation settings where it has been used to measure nursing care requirement (Tilquin et al., 1995).

The second CGA, the *Admission au maintien à domicile*, is referred to as the short form (SF; Appendix B). It has been adopted across the entire Eastern Township Regional Health Authority. The SF was developed locally by home care co-ordinators in order to standardise needs assessment at entry to home care and includes portions of other tools such as the Katz Index (Katz, 1970). The SF has recently received much attention due to the fact that it is much shorter to administer but covers the same domains. The SF assesses six domains : physical functioning (ADLs and IADLs), psychosocial functioning (including lifestyle and social support), severity of illness, service use, housing and economic conditions. It was initially developed to provide home care professionals with a minimal work burden (Équipe de recherche, 1993). The SF is a 12-page questionnaire comprising 66 items. It takes approximately 90 minutes to administer which is half the time needed to complete the SMAF. Table 7, showed the number of items that are used to assess each of the SF domains.

Only one content validity study has been reported on the SF (Équipe de recherche, 1993). In that face validation study, 100 home care professionals rated the level of relevance of each item (Yes/No). All items were rated as relevant by at least 85% of the professionals. Also, professionals were asked to identify which of the four CGAs used in Quebec (SMAF, SF and two other locally designed CGAs) was the most acceptable. There was a strong consensus about acceptability of the SF ; over 80% of front-line professionals and regional managers indicated that the short SF-CGA would be an acceptable tool for them to use (Équipe de recherche, 1993). No other reliability or validity studies have been reported in the literature to date.

Apart from the number of items and the length of time it takes to administer both CGAs, there are other differences between the SMAF and the SF. The first difference is that the SMAF includes a communication domain in which limitations in vision, hearing and speaking are reviewed, whereas the SF investigates these limitations under the severity of illness domain. Secondly, the SF features service use as a specific domain, whereas the SMAF investigates this in each of the domains separately. The third difference is that the Part A of the SMAF is closed-ended and provides a range of scoring opportunities. A fourth difference concerns the psychometric properties of the two scales: for the SMAF, validity and reliability was tested in hospital and outpatient settings (Hebert et al., 1988a, 1988b; Desrosiers et al., 1995). For the SF, using a focus group approach, only content, face validity and acceptability have been evaluated. The research team who evaluated the content and acceptability of both the SMAF and the SF argue that although both CGA procedures were devised to assess patients at entry to home care, they were primarily developed for management purposes (Équipe de recherche, 1993). The SMAF was developed to standardise needs assessment at entry to home care in order to ensure quality of care, whereas the SF was developed to reduce the work burden of health personnel and to support decision-making in home care (Laberge et al., 1994). As an indicator of content validity, the next Table 8 compares the two CGAs used in Quebec to the four 'gold standard' CGAs reviewed previously.

It is clear that the NMDS is by far the most comprehensive CGA, given the overall number of domains covered and the sub-sets of items included in

each domain. When compared to the 'gold standards', the SF is one of the shortest and least comprehensive of all CGAs. However, it takes longer to complete than the OARS and the MAI. The fact that the two CGAs were devised for different purposes might explain why the number of items and the time requested for completion vary.

Table 8: Characteristics of six CGAs

Domains and Items	CGAs[1] NMDS[2]	OARS[3]	CARE[4]	MAI[5]	SMAF[6]	SF[7]
Physical function						
ADLs	+	-	-	-	-	-
IADLs	+	=	=	=	=	-
Psychosocial function						
Anxiety	+	-	-	-	-	0
Depression	+	=	-	-	=	0
Life satisfaction	+	-	=	-	-	0
Cognitive function	+	-	-	-	-	-
Family support	+	=	=	=	=	=
Social support	+	=	-	-	-	-
Burden of disease						
Severity of illness	+	=	=	=	-	-
Economic condition	+	=	-	-	-	-
Housing condition	+	0	-	-	-	-
Service use	+	-	-	0	-	-
Sociodemographics	+	-	-	-	-	-
Administrative data	+	-	-	0	-	-
Length (pages)	20	18	22	14	24	12
Time completion (minutes)	240	45	180	45	180	90

1 0: no item assessed; =: same number of items assessed as in NMDS; -: less items assessed than in NMDS; +: more items assessed than in NMDS

2 NMDS : Nursing Minimum Data Set Resident Assessment Instrument

3 OARS : Older American Resources and Services

4 CARE : Comprehensive Assessment and Referral Evaluation

5 MAI : Multilevel Assessment Instrument

6 SMAF : Long form CGA

7 SF : Short form CGA

Given these comparisons, and due to the fact that the SMAF shows adequate psychometric properties, the content of the SMAF shows a closer resemblance to 'gold standard' measures than does the SF. In terms of comprehensiveness, the SMAF covers the same domains and characteristics as the CARE and NMDS, but in terms of resource requirements, it is longer and requires more time for completion than the OARS and the MAI.

As the standardisation of CGA-type procedures is not yet fully widespread, this allows the Province of Quebec to be a preferred site for on-field comparisons.

1.4. AIM AND OBJECTIVES

The aim of this study is to compare the impact of two CGAs currently used at entry to home care in the Province of Quebec, a short form (SF) and long form (SMAF) on patients' health. The objectives of the study are :

Objective 1: To compare the benefits of a long or short form CGA for elderly patients admitted to home care in terms of improvements in physical HRQOL after a 12-week follow-up as measured using the physical component summary score on the SF-36 (PCS).

Objective 2: To compare the benefits of a long or short form CGA for elderly patients admitted to home care in terms of improvements in physical HRQOL after a 12-week follow-up as measured using the mental component summary score on the SF-36 (MCS).

Objective 3 : To compare the benefits of using a long or short form CGA in terms of reducing the number of nights patients at stay in health care institutions during a 12-week follow-up.

Objective 4 : To compare the benefits of a long or short form CGA in terms of reducing the number of unplanned visits with doctors from a variety of settings during a 12-week follow-up.

Objective 5: To determine the comparability of care received and structure characteristics for elderly individuals admitted to home care using a long or a short form CGA; specifically to determine if the intensity and type of care received or prevailing budget and staff mix confound the relations between CGA and outcomes.

Objective 6 : To explore and discuss the relative costs of a long versus short form CGA in the light of their comparative benefits to patients.

Based on previous literature, it is hypothesised that there will be no differences between the long (SMAF) and short CGA (SF) during follow-up in terms of improvements in HRQOL or service use.

CHAPTER TWO: STUDY PROTOCOL

2.1 STUDY DESIGN

A longitudinal two-cohort study design was used to examine the comparative benefits of the use of longer or shorter forms of CGAs. This type of design was chosen since it was impossible to find a home care programme in Quebec that did not use one form or another of needs assessment procedure prior to admission. While questions raised about the comparative benefits of using either a long or short standardised CGA could have been answered by using a control group, it is most likely that using one from any of the other Quebec home care programmes would have induced too strong a possibility of exposition bias to be kept as an alternative.

The two-cohort study was paired with a pilot phase, which permitted analysis of the psychometric properties of the instruments used in this study as well as verification of operational aspects. The pilot and main studies are presented separately in the next sections.

2.2 PILOT STUDY

The pilot study was mainly designed to assess the internal consistency, the inter-rater or the test-retest reliability of the different scales used in this study. That is to say, to assess whether the items of the scales related to each other in this particular sample of patients and measured the concepts in a reproducible

fashion (Streiner & Norman, 1995). It was also designed to measure the duration of interviews and the feasibility and appropriateness of the procedures.

2.2.1 SAMPLING, PROCEDURES AND ANALYSES

The pilot study sample consisted of voluntary participants aged 65 years old and over who were contacted at three sites. A first group was composed of 30 volunteer patients who were listed as home care patients but who were also receiving care from a day care centre affiliated with one of the participating CLSCs in the main study. A second group consisted of 10 voluntary patients who were receiving home care but attending a second day care centre affiliated with another participating CLSC. A third group consisted of 15 elderly persons recruited as volunteers from seniors attending a health education activity on normal sleeping patterns, sleeping disorders and the use of sleeping pills. This health education activity was held at one of the non-participating CLSCs. In addition, 15 non-active home care charts were reviewed.

Different techniques were chosen according to the purpose of the investigation but finally a total sample of 55 patients who had volunteered were assessed using different instruments or scales. None of these patients were participants in the main study. The specific samples and procedures for the pilot phase are described in the next paragraphs along with the tests and the psychometric properties assessed.

Concerning the validation of the two CGAs that were used by home care programmes as admission instruments, the group of 30 elderly patients from the

first day care centre were divided into two sub-groups of 15 patients who had volunteered to be assessed twice at a one-week interval (corresponding to their weekly visit) by the principal investigator who used either the long (SMAF: n=15) or the short form (SF: n=15) CGA. The investigator only completed the quantitative sections of the questionnaire which consisted of 45 closed-ended questions (Part A) in the long form CGA and 32 questions in the short form.

Then, one group of ten patients from the second day care centre affiliated with another participating CLSC agreed to be interviewed by two different nurses using the SF at a one-week interval. For this group, one of the nurses involved as an interviewer in the main study was paired with the principal investigator and both completed the SF-CGA form with the same patients.

For two of the scales used in this study, namely the GDS and the SF-36, which will be fully described in a later section, internal consistency was tested using the whole study sample (n=157) and for the test-retest, 15 patients attending the health education activity mentioned above were interviewed twice by the principal investigator at a one-week interval using both instruments. Finally, for the Cumulative Rating Index of Severity (Miller, 1992), internal consistency was also tested using the whole study sample (n=157). As the principal investigator was the only person involved in the collection of data using this instrument and, as reported later, the CIRS-G has previously demonstrated a high level of inter-rater reliability, no inter-rater reliability testing was performed for this specific study. However, in order to assess the test-retest reliability, 15 patient charts were reviewed twice by the principal investigator at a four-week interval. This longer interval was chosen in order to reduce the recall bias. The

severity score was then derived from data available in the chart and from interviews with the nurse in charge of the patient. All scores were calculated and, as suggested by Parmalee et al. (1995), correlated to their comorbidity composite which is based on a count of organ systems with moderate or greater impairment to the total score as a measure of accretive rather than internal consistency.

For the two home care CGAs (the SMAF and the SF shown in the Appendixes), reliability was measured by testing the internal consistency using the quantitative sections of the instruments. As the SMAF has already shown good psychometric properties on inter-rater reliability coefficients when administered by home care nurses in similar settings and samples of patients (details in previous section), only the SF form was tested for that property. Once again, the testing was only performed on the quantitative sections of both instruments. As the more qualitative sections were developed on a consensual basis with experts, and as they mainly serve for evaluating the consequences of the difficulties appearing in the quantitative parts, they have not been the object of pilot work. Table 9 shows the properties assessed as well as the tests used.

As shown, four types of statistical tests were used in the pilot study. First, the Cronbach Alpha test (α) was used to assess consistency in scales or instruments offering categories of responses. Second, in the GDS scale, where items were to be answered dichotomously by Yes or No, the *Kuder-Richardson formula 20 (kr-20)* coefficient was preferred. Then, because of the testing of the correlation between two different measures as a measure of accretive rather than internal consistency, (overall score and comorbidity count), the Pearson correlation was preferred in the CIRS-G. As concerns the assessment of the

inter-rater reliability in one of the two CGAs, the intra-class correlation (*ICC*) coefficient was used. The ICC was preferred to the usual *Kappa* because of the nature of the variables which offer categories of responses. Finally, the Pearson correlation coefficient (*r*) was used to evaluate the test-retest reliability. All the results from the pilot study are presented in the first section of the next chapter.

Table 9: Pilot study: Validating the instruments used in the study

Properties evaluated	Instruments used				
	Admission instruments		Other instruments used in the study		
	SMAF	SF	GDS	SF-36	CIRS-G
Internal consistency	Cronbach Alpha (α) *n*= 15	Cronbach Alpha (α) *n*= 15	*Kuder-Richardson* (*kr-20*) *n*=157	Cronbach Alpha (α) *n*=157	Pearson (*r*) n=157
Test-retest reliability	Pearson (*r*) *n*= 15	Pearson (*r*) *n*= 15	Pearson (*r*) *n*= 15	Pearson (*r*) *n*= 15	Pearson (*r*) n=15
Inter-rater reliability		*ICC* *n*= 10 *nurses* =2			

2.3 MAIN STUDY

Two groups of elderly patients who were being admitted to home care programmes which used either the SMAF or the SF as admission instruments were invited to participate in the study and those who volunteered were assessed at entry to home care and at a 12-week follow-up. Patient characteristics, including age, sex, the fact of living alone, depression, severity of illness and HRQOL, were assessed at entry. HRQOL and service use outside home care were also assessed at the end of the 12-week follow-up period. The home care

services used during follow-up were measured as well as different aspects relating to the structure of care.

2.3.1 POPULATION AND SAMPLING

The sample of participants was recruited from a population of elderly patients admitted in one of four home care programmes that had agreed to collaborate in the study. One group of elderly patients from two programmes in the Montreal-Centre Regional Health Authority had undergone the prevailing CGA: *Système de mesure de l'autonomie fonctionnelle* (SMAF), the longer form of CGA. The other group of elderly home care patients from two programmes in the Eastern Townships Regional Health Authority, had undergone the other prevailing CGA: the *Admission au maintien à domicile* (SF), the short form CGA.

All patients admitted to home care in any of the four collaborating home care programmes were considered eligible for participation in the study if, at the time of admission, they fulfilled the following criteria: (i) were ≥65 years old; (ii) had been fully assessed using one of the two forms of CGA; (iii) were admitted to home care for at least three months; and (iv) had provided written consent for participation in the study. Patients were not considered eligible if they had been given a clinical diagnosis of cognitive impairment by their consultant physician at the time of admission or if they had been referred for terminal care with a poor three-month prognosis.

2.3.2 SAMPLE SIZE

Sample size was determined on the basis of three formulae. The first was suggested by Cohen (1988), the second by Kirkwood (1988) and the third by Kraemer and Thiesman (1987). Sample size calculations were also determined on the basis of recommendations given by the Medical Outcomes Trust (1994) as well as by Ware and colleagues (1993; 1994).

The sample size was estimated on the power needed to detect differences between the two groups on the physical (PCS) and mental health component summary (MCS) scores of the SF-36. A conservative approach was adopted and based on the following parameters. First, a 5-point difference in PCS and MCS scores between the two groups (μ_1-μ_2) was used, corresponding to 1 point less than "two standard errors of measurement which is approximately a 95% confidence interval for an individual score" (Ware et al., 1994; p.8:10). The significance level was set at 0.05, assuming a non-directional hypothesis (two-tailed test). For a significance level based on a non-directional hypothesis on the summary scores, from Ware et al.'s recommendations, the standard deviation was estimated to be 10. Then, the power of the study was based on a 90% coefficient, although Ware et al. (1993, 1994) use an 80% coefficient in most studies. It was assumed that the group of patients admitted using the SMAF and the group admitted using the SF were to be equivalent in size; the same value was therefore attributed to both groups in the sample size calculation formula.

Finally, given all the parameters defined above, Ware et al. suggest 46 subjects in each group, Cohen suggests 70 subjects in each group, Kraemer and

Thiesman suggest 55 subjects in each group and Kirkwood suggests 50 in each group. Based on the highest estimate, at least 140 observations equally distributed between the two groups would be required to detect significant differences.

2.3.3 VARIABLES AND MEASURE

A total of 16 variables were measured. These variables comprise one explanatory, four response and eleven co-explanatory variables. In the following sections the relevance of using these variables is discussed and their operational definitions are described. They are also presented in summary tables at the end of these sections.

2.3.3.1 EXPLANATORY VARIABLE

Exposure relates to the fact that patient needs had been assessed using a long and more comprehensive CGA or a short and less comprehensive form. Although not classified as 'gold standards', both forms serve the same purpose as ones reviewed in the previous chapter, i.e., assess patients at admission, identify their limitations, estimate their need for care, and assist in the development of a personalised care plan for service allocation. These two CGAs were chosen because they are currently in use at the largest Regional Health Authorities in the Province of Quebec (Canada) and are becoming increasingly more popular in home care programmes.

The CGA called *Évaluation de l'autonomie multiclientèle du programme de services à domicile* (Appendix A), is a CGA that comprises two parts. Part A is the well-validated *Système de mesure de l'autonomie fonctionnelle* (as previously indicated, the acronym SMAF will be used throughout this document to indicate that CGA). It was developed in the Province of Quebec by Hébert and his colleagues at the Institute for Geriatric and Gerontological Research of the University of Sherbrooke (Hébert et al., 1988a; 1988b; Desrosiers et al., 1995). The SMAF is fully described in the previous chapter. The other CGA used in this study is called the *Admission au maintien à domicile* and as previously indicated is referred to as the short form (SF) throughout this study (Appendix A). It has been uniformly adopted by the Eastern Township Regional Health Authority. The SF was developed locally by home care co-ordinators in order to standardise needs assessment at entry to home care and is also fully described in the previous chapter.

Exposure to either of the two CGAs was therefore considered as the explanatory variable. Patients had to be exposed to either:

- the **long form procedure (SMAF)** if they had been admitted to one of the two home care programmes in the Montreal-Centre Regional Health Authority; or to:
- the **short form procedure (SF)** if they had been admitted to one of the two home care programmes in the Eastern Townships Regional Health Authority.

In order to identify exposure, patients were assigned a 5-digit entry code which included two letters to determine the CGA (MT- for Montreal or ET- for Eastern Townships) and three numbers to determine the order of entry (from 001).

2.3.3.2 RESPONSE VARIABLES

Patient outcomes can be defined as results (favourable, undetectable or adverse) of home care interventions, as measured using different indicators of patient condition or patient experience (Donabedian, 1980, 1985; Rinke, 1987; Wilkin, Hallam & Doggett, 1992). Six specific categories of patient outcomes have been suggested by the Center for Health Services Research in Denver, Colorado as the most relevant indicators in home care for elderly patients (Shaughnessy et al., 1989; 1994). These are physical functioning, health status, patient/family knowledge, psychosocial functioning, HRQOL and the use of institutional care. Recommendations from the American Geriatrics Society Working Group on CGA also state that amongst a large array of outcome measures which still need to be investigated, "the most important are HRQOL and service use in a definitive multi-center study" (Hedrick et al., 1991: 50S). While there is growing acceptance of the need for improved outcome measures in monitoring and evaluating the impact of home care for elderly patients, the previous emphasis on indicators of mortality and morbidity has been replaced with "a greater awareness of the importance of measuring HRQOL indicators in home care elderly patients" (Kind, 1988; p.21). The response variables used in this study therefore relate to the benefits expected in elderly patients from the use of a more or less

comprehensive form of CGA on two specific outcomes: HRQOL and service use. In the next sections, these response variables are defined.

2.3.3.2.1 HEALTH-RELATED QUALITY OF LIFE

In order to measure HRQOL, the Short Form-36 question Health Survey (SF-36) was chosen. The SF-36 is a generic measure of HRQOL which was constructed to measure eight concepts based on the multidimensional model of health used in the Medical Outcome Study (MOS). It consists of 36 closed-ended questions scored on a 3-, 5-, 6-point or Yes/No scale. The SF-36 produces eight dimension scores (physical functioning, role physical, bodily pain, general health perception, social functioning, vitality, role emotional, mental health) in addition to two summary scores i.e., the physical component summary score (PCS) and the mental health component summary score (MCS; Ware et al., 1994).

The initial strategies used to assess the validity of the scale were based on (i) the examination of the content validity by comparing the scale content with that of other forms of quality of life surveys and (ii) empirical testing including convergent and discriminant validity tests as well as factor analytic tests of construct validity. Examples of scales against which the content of the SF-36 was examined include the Sickness Impact Profile (Bergner et al., 1981), the Health Insurance Experiment (Brook et al., 1984), the Nottingham Health Profile (Hunt et al., 1985) and the Duke Health Profile (Parkerson et al., 1990) as well as the McMaster Health Index Questionnaire (Chambers, 1982; 1988) and the Quality of Well Being Scale (Patrick et al., 1973).

Comparisons reported by Ware et al. (1993) reveal that the SF-36 includes eight of the most frequently represented health concepts in these scales. As concerns convergent or discriminant validity, SF-36 items were correlated to other scales known to measure similar concepts. The strongest associations were found between the physical functioning in the SF-36 and that in the Sickness Impact Profile (range 0.70 to 0.80), in the Nottingham Health Profile (0.52) and in the Functional Status Questionnaire (0.73).

As concerns further construct validity, factor analysis showed that 80 to 85 percent of the variance in the eight sub-scales was accounted for by physical and mental components. This has led to the development of a two-dimension scoring and interpretation approach (Ware et al., 1994). In fact, correlations between the two principal components and all the sub-scales strongly supported development of a two-dimensional model of HRQOL: physical health and mental health. Physical health correlates better to physical functioning (range 0.77-0.88), role physical (range 0.67-0.82), bodily pain (range 0.70-0.84) and general health perception (0.53-0.76) and mental health correlates better to vitality (range 0.44-0.82), social functioning (0.46-0.73), role emotional (range 0.57-0.83) and mental health (range 0.84-0.90). As concerns reliability, Ware et al (1994) also report that estimates provided in at least 14 studies (published between 1989 and 1993) show that all tests on internal consistency or test-retest reliability, equal or exceed 0.80 except for social functioning where the median was 0.76.

In addition to initial testing or testing reported by the authors of the scales, psychometric properties of the SF-36 such as validity and reliability have been documented in more recent literature. As concerns reliability, the Stoll et al. study (1997) measured the internal consistency of the SF-36 in 150 patients (95% female, mean age 39.7) suffering from systemic lupus erythematosus. Their results showed that all Cronbach Alpha reliability coefficients were higher than 0.75. Anderson, Laubscher and Burns (1996) also performed a reliability study. They recruited 90 Australian stroke patients who completed the SF-36 once (mean age 72.0 years). Their results lead to similar conclusions: all Cronbach Alpha tests were higher than 0.70.

The SF-36 has also been specifically validated in elderly populations. Lyons, Perry and Littlepage (1994) administered the SF-36 to a random sample of 216 adults aged 65 years and over from West Glamorgan Health Authority in Swansea, Wales. They found a high degree of internal consistency since the Cronbach Alpha test exceeded 0.80 for each of the eight dimensions of the scale. The Brazier et al. (1996) study included 377 female respondents over 65 years of age (mean age 80.1 years) of whom 86.5% stated they had a long-standing disability. These women were recruited into a double blind RCT of clodronate at the Centre for Metabolic Bone Disease in Sheffield, UK. In their study, the Cronbach Alpha test ranged from 0.56 to 0.91. Only two of the eight scores were lower than 0.80: social functioning (0.56) and general health perception (0.66) of which only one was lower than 0.60. They also analysed the discriminant validity of the measure of change by correlating the scores of women who said their health had not changed between initial assessment and

first follow-up at six months to scores of those who reported it had improved. The Spearman rank correlation coefficient (r_s) used, which ranged from 0.28 to 0.70 with 87.5% of the item correlation under 0.70, showed that the relation between the score changes from both groups was moderate to low and therefore seemed to be a discriminant. Weinberger et al. (1991), in their study, compared the internal consistency of different methods of administration (telephone and face-to-face administration) for 42 elderly patients (mean age 68.5) recruited from the General Clinic of the Durham Department of Veterans Affairs Medical Center in North Carolina. Patients completed the SF-36 twice, first when they were contacted by telephone and second, when they were interviewed face-to-face within 30 days of the telephone interview. Cronbach Alphas were comparable for telephone (range 0.58 to 0.86) and face-to-face interviews (range 0.70 to 89). Paired *t*-test found that none of the differences between the scores from the two methods of administration were significant at a 0.05 probability level.

The original SF-36 was developed in English but it was also recently translated into French and validated in studies that were part of the International Quality of Life Assessment Project (IQOLA). The first French translation of the SF-36 was produced in France and tested by Leplege, Mesbah and Marquis (1995) on 159 patients with angina. The translation process is reported to be in conformity with the IQOLA recommended procedure (Aaronson et al., 1992). Internal consistency in the translated scale indicated that items are highly related since Cronbach Alphas ranged from 0.79 to 0.95. The second French translation was into French-Canadian by Wood-Dauphinee and her colleagues at McGill University in Montreal, Canada (1997) who also used their study to validate the

English-Canadian form of the scale. Their study is also part of the IQOLA Project (Aaronson et al., 1992) and they used the recommended translation procedure. They recruited 142 individuals (mean age 67.4 years) who completed the French-Canadian version which was administered by a trained interviewer. Using the Cronbach Alpha, internal consistency ranged from 0.80 to 0.94 in all dimensions and exceeded the cut-off of 0.70 in 100% of the items.

From these studies it can be concluded that the SF-36 was shown to have a high degree of internal consistency and good construct validity. They have also shown that the SF-36 is suitable for use with an elderly French-Canadian-speaking population, especially when used in an interview setting. In this study, HRQOL was therefore measured using the SF-36 (Ware et al., 1993; 1994) at admission and at the end of the 12-week follow-up period in the following way:

- **Change in HRQOL over time.** A change score was computed on the eight dimensions and on both the PCS and the MCS according to the recommended procedures, i.e. "subtracting baseline scores from the scores collected at (12-week) follow-up assessment" (Ware et al., 1994: p.8-10).

2.3.3.2.2 SERVICE USE

When considering the concept of need mentioned in the first chapter, service use refers to expressed needs or demands for care. It relates to the

voluntary use of health services which patients make while they are at the same time receiving care under a specific programme. Thus, utilisation of services is seen as an outcome in a form of health-seeking behaviour that reflects unmet needs. To discuss the sensitivity of such an outcome, Browne et al., (1990, 1995, 1996) in their review of a series of nine studies, have demonstrated that the use of health services by chronically ill patients has been shown to be independent of disease in the form of medical diagnosis, but closely related to preference as well as to the perception of poor adjustment to disease in terms of functioning. They have found that in community care programmes where needs anticipation and iterative needs assessment were used combined with appropriates services, these were associated with lower frequency of service utilisation (thereby costs) and better or at least equal patient outcomes in different aspects of functioning. In community care where needs were not assessed using a standardised approach, service utilisation rates were much higher. Although the results from the studies reviewed in their article cannot be compared statistically because the outcomes measured were different in each study, it is still significant that, for the cognitively impaired patients enrolled in day care programmes which make a thorough needs assessment at admission, the cost of using services outside the programme was 7,000 Canadian dollars (CND$) and that for those who refused assessment at the day-care centre, the cost was over CND $8,000. The difference in cost for patients receiving community-based mental health services and those who were not was even higher (CND $500 vs. $13,000). The most striking difference in expenditure was for those patients in various community rehabilitation day-care programmes. Costs were much lower for patients thoroughly assessed than for patients

receiving regular institutional care without iterative assessment (CND $300 vs. CND $21,000). Browne et al. (1990) had previously developed the Health Services Utilization scale (HSU) in order to standardise the collection of service use data. The 63 items included in the HSU are from three specific service areas: health care, social services and financial income after illness. In their scale, the hospitalisation, laboratory and medical use data were found to be the most reliable when 141 patients' recall was compared with clinic records at a 2-month referral follow-up. The observed agreement ranged from 0.79 to 0.99. When observed agreement was adjusted using the *Kappa* statistic, it ranged from 0.58 to 0.89 which reflected adequate levels of agreement.

In this study, service utilisation was measured by hospital and medical services. The patients were questioned directly at the 12-week follow-up interview. These patient reports were confirmed by consulting the nurses involved in the patient's care plan and by chart review. Use of health services was defined by:

- Nights in hospital, measured in terms of the **number of nights admitted to acute, long-term care institutions or nursing homes** between admission and 12-week follow-up.

A specific variable of nights in hospital to be used in the regression models was created by summing the number of nights spent in acute care, in long-term care institutions and in nursing homes.

- Visits to physicians, measured by the **total number of visits to a physician** (other than physicians attached to HC) between admission and 12-week follow-up. This includes the number of times the patient consulted a doctor at any of the following venues:
    - physician's private clinic;
    - walk-in community care clinic;
    - hospital outpatient department; or
    - hospital emergency department.

A specific variable to be used in the regression models (the number of visits to physicians) was created by summing data from the number of visits to doctors in private medical clinics, community care clinics, outpatient departments, and emergency departments.

2.3.3.3 CO-EXPLANATORY VARIABLES

Co-explanatory or confounding variables which may " explain in part or obscure the relationship between the dependent and independent variables " (Abramson, 1990: p.94) include those that relate to patient characteristics, to the care received or to structural characteristics of the settings where the study was performed. They are described in the following sections.

2.3.3.3.1 PATIENT CHARACTERISTICS

Socio-demographic characteristics

Three socio-demographic characteristics were measured: **age,** as measured using date of birth subtracted from date of admission in the study; **sex,** as indicated on the CGA form; and the fact of **living alone or not,** as answered by the participant at the time of the first interview and confirmed by the nurse in charge of the patient.

Severity of illness

Severity of illness was scored using the original English version of the Cumulative Illness Rating Scale for Geriatrics (CIRS-G; Linn et al., 1968; Linn, 1976). The CIRS-G reviews medical problems in 13 organ systems which are individually scored and summed to represent a total burden of illness with a possible range between 0 and 5. The CIRS-G is one of the few instruments that has been adapted and validated for geriatric residential populations (CIRS-G; Miller et al., 1992; 1994). It is based on a five-point rating given the following levels of severity in each organ system: 0= no problem; 1=current mild problem or past significant problem; 2= moderate disability or morbidity that requires 'first line' therapy; 3= severe or constant and significant disability or uncontrollable chronic problem; 4= extremely severe problem where immediate treatment is required as in organ failure or severe impairment in function. This score is then divided by the number of organ systems that were listed as problematic.

The first reliability study on the CIRS-G was performed by Miller and his colleagues from the University of Pittsburgh (1992). They recruited 141 participants from two different settings. For testing convergent validity, each individual recruited was first evaluated using the CIRS-G and then underwent a complete medical examination including a physical exam, complete blood count, liver and renal function tests and an electrocardiogram. The CIRS-S scores were matched to the individual profile determined by medical examination. One hundred percent of the problems scored in the CIRS-G were also revealed at examination. Then, inter-rater reliability was measured on the total score and on the number of categories completed by five raters (three physicians and two geriatric psychiatrists) on a sub-sample of 10 outpatient participants and 10 inpatient participants. On the total score, the *ICCs* were 0.78 (lower bound 0.58) and 0.88 (lower bound 0.85) for outpatients and inpatients respectively. The *ICC* on the number of categories endorsed was 0.81 (lower bound 0.70) for inpatient participants and 0.83 (lower bound 0.78) for outpatient ones. These *ICCs* were considered strong for the number of interviewers i.e., they did not inflate or deflate when the number of raters was increased. Miller et al. also report that they examined face and discriminant validity by correlating the total score to the Older American Activities of Daily Living Scale in a sub-sample of 40 older participants (mean age 66.9) from a medical clinic. A Spearman rank order correlation of 0.58 was found suggesting that a cumulative burden of illness may be associated with the performance of daily activities. Age was found to be related with increasing illness severity as estimated by the global score in the CISR-G (r= 0.45; p= 0.002). Comparing scores from the medical group to those from the healthy control group of 35 showed that there was a significant

difference between groups as concerns the total score (p= 0.05) as well as the number of participants that were rated with a level-3 severity (p= 0.01).

Waldman and Potter (1992) conducted another study that included 181 elderly participants (mean age 79.0 years old). Validity was assessed by examining the association between the total CISR-G score and other measures. It correlated significantly with ADL (r= -0.47; p= 0.0001), IADLs (r= -0.34; p= 0.0001); days in hospital (r= 0.23; p= 0.002); use of medication (r= 0.31; p= 0.0001) and morale (r= -0.30; p= 0.003) which were considered as indicators of illness. Reliability was assessed by reviewing and rescoring 25 randomly selected charts. It showed that the pairs of scores correlated sufficiently (r= 0.85) to support good reliability. Furthermore, the authors hypothesised that severity of illness would contribute to a model predicting hospitalisation and mortality. When entered alone in a regression model, the CIRS-G was not a significant independent predictor of death. However, when entered in a model that included three other predicting variables (CIRS-G, ADL, IADL; r^2= 0,7, p= 0.0001), it was a significant predictor of death. It was also found to be an independent and significant predictor of future hospitalisation (r^2= 11,9; p= 0.0008).

The latest study examining CIRS-G properties was performed by Parmalee and her colleagues from the Polisher Research Institute in Philadelphia, Pennsylvania (1995). They examined its validity (particularly by the measure of association with different types of variables such as mortality, hospitalisation, medication, lab findings and disability) by using medical charts and self-reports from 439 elderly residents of a large multi-level care facility. The

CIRS-G was found to be an independent and significant predictor of mortality over a 2-year period (r^2= 32.63; p≤ 0.001) with greater scores associated with decrease in survival time. The comorbidity count (number of organ systems scored) was found to be moderately but significantly correlated with total number of prescribed doses of medication (r^2=.30; p≤ 0.05). The measure of association between the CIRS-G total score or the comorbidity count and clinical laboratory results was established using an ANOVA procedure. They found that both the total score and the comorbidity count were respectively and statistically associated at a 0.01 level of probability with anomalies in albumin (F= 16.21; 10.10), haemoglobin (F= 8.82; 7.79), red cell blood count (F= 7.03; 6.25) and creatinine (F= 16.51; 5.50) which are normative indicators of illness. Internal consistency was measured using correlation of the CIRS-G total score with scores in individual organ systems rated as impaired. All items correlated over 0.60 with a statistical probability level lower than 0.05.

These studies indicate that the CIRS-G is a valid and reliable measure of disease. In this study, the manual of guidelines (Miller & Towers, 1991) which provides indications for each organ system was strictly followed for scoring. Data was extracted by the principal investigator from the admission information in individual patient charts. When missing, it was obtained from the care manager.

Depression

As a potential co-explanatory variable, **depression** was measured at admission using the Geriatric Depression Scale (GDS; Yesavage et al., 1983).

The scale is based on the Zung Self-rating Depression Questionnaire (Zung, 1965) and consists of 30 closed-ended questions with a Yes/No response scale. Twenty of the 30 questions are positively framed and 10 are negatively phrased. After transformation, a final score is calculated based on a total score of 30 with an original cut-off score for clinical depression established at 20 (a score of 21 to 30 indicates clinical depression, 11 to 20 indicates mild depression, and between 0 and 10 indicates the absence of depression). Initial testing of the content validity of the GDS involved 3 groups of individuals: 40 normal elderly subjects, 32 who were diagnosed with mild depression and 26 who were diagnosed as suffering from severe depression at the time of administration. *T*-tests conducted between pairs of means showed that patients classified as normal had lower scores at a probability level of 0.001, than those classified as suffering from mild (5.75 vs. 15.05) or severe depression (5.75 vs. 22.85). The mean score in the group of mildly depressed elderly participants also differed statistically from the mean in the severe depression group (15.05 vs. 22.85). Correlation between GDS scores and scores of the Hamilton Rating Scale for Depression showed a strong correlation of 0.83 demonstrating that both scales measured a similar depression concept. Reliability was measured by different measures of internal consistency. First, the correlation of items with the total scores which varied from 0.46 to 0.83 with a mean correlation of 0.63, showed that all items were at least moderately related to the final score. A Cronbach Alpha coefficient was also calculated using all items and reached a high level of 0.94 indicating once again that all items were inter-related. Additionally, a split-half reliability coefficient using the Spearman-Brown formula was calculated, it also reached a high level of 0.94. In the same study, the authors performed a test-retest reliability with 20

subjects using a 2-week interval in which a correlation as high as 0.84 was obtained. Finally, inter-rater reliability was measured using 15 patients assessed by two psychiatric nurses. It was calculated using a *Kappa* that reached 0.90 with 100% of items scoring ≥ 0.80. These tests therefore suggest a high degree of validity, internal consistency and stability in favour of the GDS.

Other testing of the GDS has been reported in more recent literature. McGivney, Mulvilhill and Taylor's study (1994) was designed to examine the specificity and the sensitivity of the scale in discriminating clinical depression when used in a two-step procedure involving a pre-selection of patients who had scored ≥ 15 on the Mini-Mental State Exam (MMSE; Folstein et al., 1975). Testing involved a sample of 66 newly admitted residents in Public Nursing Homes Facilities in New York. The MMSE was completed during an assessment of depression performed by trained psychiatrists and the GDS was completed the next day during an interview performed by non-medical research assistants. The testers were blinded to each others' results. When using the best cut-off scores on the MMSE (≥ 15) and the cut-off score of 10 in the GDS, the GDS specificity was of 84% and its sensitivity was as high as 91%.

It is worth noting that one of the problems in measuring depression among French-speaking respondents is the shortage of reliable and valid scales produced in French or translated into French. However, the GDS is one of the few measures of depression that was translated into French-Canadian using a systematic forward-backward translation procedure (Bourque, Blanchard & Vézina, 1990). The comprehension of the translated form was pre-tested with

100 elderly French-speaking Canadians. Then, the psychometric validation was performed in sub-samples of elderly persons who spoke French at home and came either from the province of New Brunswick or from the province of Quebec. Internal consistency was verified using formula 20 of the Kuder-Richardson (*KR-20)* test and was high in the sub-sample of 54 participants from New Brunswick (0.84) as well as in the sample of 51 from Quebec (0.90). The authors also used the Guttman Split-half method for which correlation coefficients were respectively 0.82 and 0.88 in the samples from New Brunswick and Quebec. Test-retest (using a Pearson coefficient *r*) and inter-rater reliability (using a Kappa test *k*) revealed good stability in both groups (r= 0.83, k= 0,81 in New Brunswick and r= 0.70, k= 0.89 in Quebec). Finally, moderate to high convergent validity coefficients were obtained when correlating scores on the GDS to scores on the French version of the Beck Depression Inventory (Bourque et Beaudette, 1982; r= 0.63 in New Brunswick and 0.76 in Quebec). Therefore, the properties of the French version of the GDS make it one of the best scales available for use in an elderly French-Canadian population. It was used at admission to HC.

2.3.3.3.2 VARIABLES RELATED TO THE CARE

Care received (CR)

Using recommendations provided by the Centre for Health Services Research (Shaughnessy et al., 1989), two characteristics of the care were extracted from individual patient charts and from the management information system. The two characteristics of care that were measured included:

- *The actual package of care received* (CR), measured by **the number of times different types of care were received during the 12-week follow-up**. The types of care were those registered in the classification system (codes) used in the HC programs:

  - **medical care** (codes 6400, 6500, 6700) in the form of: initial (complete) medical examination comprising diagnosis and prescription of care, tests or medication; follow-up medical examination comprising prescription of care, tests or medication; and referral.

  - **nursing care** (codes 7000, 7200, 7300) in the form of: needs assessment; health education; physical care; psychosocial care; referral.

  - **social service** (codes 7400, 7700, 7800) in the form of: psychotherapeutic care: individual or family; psychosocial interventions (individual and community).

  - **rehabilitative care** (codes 7600) in the form of: maintenance or development in ADLs & IADLs; home adaptation.

  - **home help** (codes 7900, 8300) in the form of: personal hygiene; house cleaning; meals and/or shopping; transportation to and from health services.

- *Intensity of care* (INT), measured by **the total number of patient visits** by all HC professionals between admission and follow-up.

2.3.3.3.3 VARIABLES RELATED TO STRUCTURAL CHARACTERISTICS

Donabedian has stated that structural variables are the "relatively stable characteristics of the providers of care, of the tools and resources they have at their disposal and of the physical and organisational settings in which they work" (Donabedian, 1980: p.81). The concept of structure therefore includes the human, physical and financial resources necessary and available to provide care. Three structural characteristics were assessed:

- *Home care budget per capita for the population over 65 years of age* (BUD), measured in terms of the **total 1995 budget divided by the number of persons over 65 years of age in the territory**. The budget figures were obtained from the directors of the participating HC programmes and confirmed with the Regional Health Authorities (Gouvernement du Québec, 1992a).

Expenditure included the following: nursing care (e.g. salaries of nurses, travel and materials); home help (e.g. salaries of home helpers, travel, materials and directly allocated budget); psychosocial services (e.g. salaries for social workers, travel, materials); specialised services (e.g. salaries for physiotherapist and occupational therapist, travel, equipment); special travel budget allocated for

elderly patients or their families in order to have them come to the HC base; and finally, administrative expenditures (e.g. co-ordinator's salary). The population over 65 years old in each programme was identified with reference to the most recent provincial demographic figures (Pelletier, 1996). The per capita proportion was calculated using the total HC expenditures for 1995 divided by the population over 65 years old for 1995.

- *Staff mix* (STFMX), measured by the **percentage of nurses on each HC team**.

- *Costs to be attributed to the use of one or the other of the CGAs.* Costs to be attributed to the use of CGAs were measured on an **hourly basis** from the mean of HC nurse practitioner's salary (that included social benefits) for the 1995 year. This salary was estimated at CDN $40.00/hour.

All the variables used in this study are identified and described in the following tables.

Table 10: Variables used in the study

Variables		Definition	Scale
Explanatory variable			
CGA admission procedure		1. Procedure used at admission to HC	SMAF=SM SF=SF
Co-explanatory variables			
Patient characteristics	Age	2. Age at admission	AGE= Years
	Sex	3. Sex 1= Men; 2= Women	SX= % (1) / % (2)
	Severity of illness	4. Severity of medical problems by organ systems	CIRS-G = 0 - 4
	Living alone	5. The fact of living alone or not (Yes/No)	LIV= 0 - 1
	Depression	6. Depression (GDS)	GDS = 0 - 30
	HRQOL	7. SF-36 admission scores	SF-36=0-100

Table 10 (cont'd): Variables used in the study

Variables		Definition	Scale
Co-explanatory variables			
Care	Type of care received	12 MC= medical care; NC= nursing care; RC= rehabilitative care; PC= psychosocial care; HH= home help care	TC= number of visits for each type of care
	Intensity	13. Number of visits in 12 weeks	INT= total number of visits
Structure characteristics	Budget	14. Per capita HC budget	BUD= CAN$65
	Staff mix	15. Percentage of nurses on team	STFMX= %
	Costs of administering CGAs	16. Cost per hour HC nurse practitioner	COSTS: $40/HR

Table 10 (cont'd): Variables used in the study

Variables		Definition	Scale
Response variables			
Impact on HRQOL	HRQOL change over 12 weeks	8. Change in SF-36 PCS score [score 12 wks - admission score] 9. Change in SF-36 PCS score [score 12 wks - admission score]	DIFPCS = 0 - 100 DIFMCS = 0 - 100

Impact on service use	Service use	10. Nights in hospitals during 12-week follow-up
		11. Visits to physicians during 12-week follow-up
			NH= # nights
			VP= # visits

2.3.4 PROCEDURES

2.3.4.1 APPROVAL FROM ETHICS COMMITTEES

The study protocol, the screening at entry form and all instruments to be used in the study were transmitted to each participating HC programme for approval by their ethics committees. These committees were usually composed of CLSC professionals who were involved in research projects and invited members from affiliated universities. All letters of approval are included in Appendix C.

2.3.4.2 SELECTION AND TRAINING

Two types of interviewers were involved in the study: the admitting nurses who had to administer the CGA in order to admit patients to HC acted as interviewers who selected the patients and asked for consent; and the nurses who used the instruments which were specifically needed for this study.

Admitting nurses were from HC programmes already involved in administering the CGA. In order to participate in the study, they were trained to select patients according to inclusion criteria, explain the study to patients and obtain a signed consent form. The principal investigator met with each nurse to explain the study and review the inclusion criteria and consent form. Simulations (including cases which met inclusion criteria and cases which did not) were

performed in order to verify the understanding and application of inclusion criteria used to select patients properly.

The other nurses, who were involved in interviewing elderly HC patients with the instruments needed for this study, were recruited as research interviewers using the following procedure. An offer to apply as a research interviewer in the study was sent to all the nurses in collaborating CLSCs, regardless of their actual programme affiliation (offers were sent to nurses from HC and other programmes such as day care centres, family health, community psychiatry, etc.). All nurses were invited to apply and send their resumes to the HC administrators if (i) they had completed a bachelor's degree in nursing sciences and (ii) had previous research experience. A total of twelve eligible nurses who had submitted applications were then interviewed and ten were finally selected by the principal investigator and an HC administrator. Five of the ten were already HC admitting nurses and involved in administering the CGA and screening patients.

The ten nurses who acted as study interviewers were trained to administer the SF-36, administer the GDS and collect data on service use. Each admitting nurse received one and a half hours of training from the principal investigator. During the meeting, the study was explained, the inclusion criteria reviewed and the consent form was discussed. All questions from the interview questionnaires, which included the SF-36 and the GDS, were reviewed during the training session. Instructions for administering the SF-36 were given according to the procedures in the SF-36 manual and guidelines. Accompanied

by the principal investigator, each nurse interviewed two recruits to the study in the days following training. A discussion highlighting any difficulties was held immediately after the second interview. On receipt of the completed questionnaires, the author reviewed all questionnaires and met with nurses in each HC programme on a regular basis (every two weeks). Nurses were asked to immediately note any problems experienced in the interview on the questionnaire itself. They were also given the investigator's private and office phone numbers and requested to call free-of-charge if any problem occurred. Two of the ten nurses already had specific research experience with the SF-36.

2.3.4.3 SCREENING FOR ELIGIBILITY

Screening therefore took place at the time of the first contact between elderly patients and the HC admitting nurse when they were interviewed to complete the admission CGA procedure. The entry protocol required that the admitting nurse determine the patient's eligibility by reviewing the criteria printed on the "Screening and Consent" pages of the interview package (see Appendix C). If patients met the eligibility criteria, the nurse explained the study to them in accordance with the instructions on the second page of the package, and then asked them if they would agree to participate in the study.

Patients who agreed to participate were asked to sign the consent form. According to the specific protocols established with the ethics committee in each of the participating HC programmes, the consent form was either removed from

the questionnaire and kept with each patient's chart or sent to the researcher. In all cases, the patient's consent was noted in the chart.

2.3.4.4 ASSESSMENT AT ENTRY

Patients, who had volunteered and signed the consent form needed first to have been assessed, using whichever of the two CGAs was in use. They were then to be interviewed using the admission questionnaire that included the SF-36 and the GDS. Patients were given the choice of answering in English or French. The interview nurses returned completed questionnaires in prepaid and pre-addressed envelopes supplied for this purpose. On receipt of the completed questionnaires, the author informed the admitting nurse of the date of the 12-week interview, then checked and entered the data. As soon as a new patient was included in the study, the severity of illness scale (CIRS-G) was completed by the principal investigator after reviewing the patient admission chart which included notes from nurses and medical notes.

The first seventeen study interviews which had been performed by interview nurses, who also acted as HC admitting nurses, showed that the research questionnaire was too long to be administered immediately after the admission procedure. All interview nurses (including those who also acted as admitting nurses in HC) were therefore asked to complete the research questionnaire within 24 to 48 hours of admission. However, in six cases, when the aged participant lived more than 20 kilometres from the CLSC, the interview nurse performed the research interview on the same day as the admission

procedure using the CGA. This will be discussed in the section on the limitations of the study.

2.3.4.5 FOLLOW-UP ASSESSMENT

A telephone reminder was made to the nurse interviewer four weeks before the follow-up interview was scheduled and a mailed reminder was sent exactly two weeks before the interview (see Appendix E). This follow-up procedure was agreed upon with the HC teams in order to ensure that the 12-week interview was conducted on the date specified and by the same nurse who had interviewed the patients. All follow-up assessments were done within five days (+/-) of the target date using a follow-up questionnaire including the SF-36 and a set of questions tailored to collect data on service use (see Appendix F).

2.3.4.6 CHART REVIEW

The CIRS-G ratings for each patient were made by the principal investigator and the HC nurse manager after completion of the chart review. A decision based on a consensus was made for each patient who had agreed to participate. In 17 cases, consultation with an HC physician was also necessary to clarify complex medical problems before agreeing on a final scoring.

Care received during follow-up was assessed by the principal investigator using the patients' charts and the data systems (STATUS or

LOGIBEC) that were currently in use in each HC programme. These methods permitted retrieval of the data on the types of care involved as well as on the number of times the person was visited at home by a professional during a set period of time (see Appendix G). Written permission to use the data system was provided by each HC coordinator involved in the study. Data was verified with the nurse care manager whenever discrepancies were found between the two sources of information.

The information services manager was present with the author during the retrieval of data from the system. In most cases, the manager had already retrieved the data from the system at the time of the working session. Dates for which information was requested as well as patient file number were checked twice for accuracy (by the author and by the manager).

2.3.5 DATA ANALYSIS

Data was first checked for missing values of inclusion criteria and socio-demographic variables. The author contacted the admitting nurse to obtain any missing data. Data was then entered using a capture profile developed for use on the SAS® statistical software package. A second individual randomly checked data in order to detect errors. Missing values were checked using the original source of data and corrected when available. Data was then analysed using SAS®.

Several factors were considered in choosing the method of analysis including (i) comparison purposes of the investigation; (ii) continuous or categorical characteristics of the measured variables; (iii) statistical assumptions concerning the measured variables; and (iv) the sampling procedures.

Two main approaches to data analysis were used: descriptive analyses and inferential analyses including group comparisons and regression analyses.

2.3.5.1 DESCRIPTIVE ANALYSES

Descriptive analyses were used to describe the study population at entry in order to compare the study sample with other samples of elderly patients reported in the CGA literature. For continuous or categorical variables, the means, standard deviations and confidence intervals were calculated. For dichotomous variables, percentages were used.

2.3.5.2 GROUP COMPARISONS

Comparisons were performed in order to examine the characteristics of participants vs. patients who had refused to participate and those lost to follow-up (dropouts). Comparisons were also used to compare the two CGA groups at baseline and to evaluate the comparative benefits at the 12-week follow-up. Comparisons between groups were made with regard to change in individual and summary scores of HRQOL on the SF-36 from admission to follow-up, and with regard to service use during the 12-week follow-up, measured by the number of

nights spent in hospitals and the number of visits to doctors outside HC. For continuous variables, significance tests using either *t*-tests, paired *t*-tests or an *f*-test were performed to test differences between means. *P-values* are reported in order to facilitate comparisons between results from this study, and previous reports in the literature in which means and standard deviations are commonly reported. Confidence intervals are also reported in order to facilitate interpretation of findings.

For categorical variables, *chi-square tests* were performed to test differences between percentages. For variables on which group differed at baseline, an analysis of variance using an *F-test* was always preferred.

2.3.5.3 MULTIPLE REGRESSION ANALYSES

Multiple regression analyses were used to evaluate the relationship between groups of variables which relate to the needs assessed, the care provided and the benefits measured. Benefits were considered as response variables and care received was considered as an explanatory or co-explanatory variable (Kleinbaum, Kupper & Muller, 1988). Models were developed in order to determine the extent, direction and strength of the associations between sets of variables under the hypothesis that more or less comprehensive procedures designed to assess needs would be similarly associated with the benefits (response variable).

The models developed in order to meet the research objectives used four response variables. One response variable was used at a time: (i) change in the PCS scores of the SF-36, (ii) change in the MCS scores of the SF-36, (iii) length of stay in hospital during follow-up and (iv) medical care used outside HC. Four multiple regression models were therefore constructed; they were tested for confounding and interactions between co-explanatory variables and were used to examine the extent to which explanatory or co-explanatory variables predicted change in the response variables. Co-explanatory variables which modified the partial R^2 of the exposure variable to an extent established at 15% were considered potential confounders[1] and were included in the final model. The general approach to model development was to:

- determine the predicted (criterion) variable;
- identify the predictor variables of interest;
- verify that model assumptions (linearity of associations, homoscedasticity and normality) were not violated;
- specify the strategy for selecting the variables: a pre-determined model procedure was selected in order to reach the study objectives;
- conduct the analyses;
- examine the extent to which predictor variables explained the predicted (criterion) variable;
- identify the predictors that were significantly associated with the predicted (criterion) variables.

---

[1] This decision was based on recommendations from Kleinbaum, Kupper and Muller (1988: p.172) and from experts in the field of biostatistics applied to geriatrics.

The four regression models tested included:

1. Model I: Change in physical HRQOL of the SF-36
    - Criterion variable: change in the PCS score
    - Co-explanatory variables entered one at a time: gender, age, depression, living alone, severity of illness, baseline in MCS score, intensity of care, type of care received, length of stay in hospital, medical care sought outside HC, budget, staff mix;

2. Model II: Change in mental HRQOL
    - Criterion variable: change in the MCS score of the SF-36
    - Co-explanatory variables entered one at a time: gender, age, depression, living alone, severity of illness, baseline in PCS score, intensity of care, type of care received, length of stay in hospital, medical care sought outside HC, budget, staff mix ;

3. Model III: Length of stay in health care institutions during follow-up
    - Criterion variable: number of nights spent in health care institutions during follow-up;
    - Co-explanatory variables entered one at a time: gender, age, depression, frailty, severity of illness, baseline PCS, baseline MCS, intensity of care, type of care received, medical care sought outside HC, budget, staff mix;

4. Model IV: Visits to physicians outside HC:

- Criterion variable: number of visits to or from physicians not related to HC during follow-up.
- Co-explanatory variables entered one at a time: gender, age, depression, frailty, severity of illness, baseline PCS, baseline MCS, intensity of care, type of care received, length of stay in hospital, budget, staff mix.

3. CHAPTER THREE: RESULTS

This chapter is divided into six sections. In the first section, the results from pilot work mainly concerning the reliability and validity testing of the instruments used in this study are reported. In the second section, the study sample is described. The baseline characteristics of elderly patients who agreed to participate in the study and who completed both interviews (participants) are compared with those who refused to participate (refusers) and those who were not available to be interviewed at follow-up (dropouts). In the third section, baseline results of the participants are compared to those of frail elderly patients reported in other CGA studies or to those of frail HC or ambulatory elderly patients assessed using the same instruments. In the fourth section, baseline comparability analyses of participants in the long (SMAF) and the short form (SF) CGA group are presented. In the fifth section, differences between the two groups in terms of benefits as measured by the comparative changes in HRQOL and by the type and intensity of services used during follow-up are reported. The variables associated with the explanation of change in HRQOL or of service utilisation are also examined. In the sixth and concluding section a summary of findings is presented.

3.1 RESULTS FROM PILOT STUDY

The pilot work consisted of two steps. First, the duration of the interviews was tested while using the SMAF and the SF. Then the psychometric properties

of the scale were analysed according to the strategy described in the previous chapter.

3.1.1 DURATION OF INTERVIEWS

The duration of the interviews was calculated in minutes for the first 30 patients to be admitted to the study. These included the first 15 elderly patients who had been admitted using the SMAF and the first 15 who had been admitted using the SF. As indicated in Table 11, results show that the interviews performed using the SMAF lasted an average of 154 minutes compared to an average of 104 minutes for those performed using the SF. Despite the relatively small amount of data which served in this pre-test, results show that means and their confidence intervals do not overlap and the probability that these means are not different is far below the threshold of 0.05 established for this study. These results therefore indicate that the time needed to complete the SMAF is much greater than that needed for the SF (difference of 49.7 minutes; p= 0.002). This will be taken into consideration in subsequent discussions related to the comparative costs of such procedures.

Table 11: Range and mean time [CI] of duration of interviews

	SMAF *n*= 15	**SF** *n*= 15	*Df*	*t-test*	*p*
Mean time in minutes [CI]	154.1 [148.4-159.8]	104.4 [99.1-109.7]	29	2.341	0.0002
Range in minutes	134-172	85-120			

Immediately after these results were made available, the duration of interviews was discussed with the HC co-ordinators as well as with the admitting nurses involved in this study. It was concluded that pairing additional baseline assessment to the admission procedures could indeed create an undesirable interview burden on frail elderly participants. As this could have resulted in indisposing patients unnecessarily, it was agreed with the HC co-ordinators and the admitting nurses involved in the study to stop conducting the baseline interviews immediately after the administration of the CGA. It was decided to perform baseline interviews within 24 to 48 hours after admission. This has been discussed in a previous section.

3.1.2 PSYCHOMETRIC PROPERTIES OF THE INSTRUMENTS USED IN THIS STUDY

As stated in the previous chapter, the pilot study also included the testing of the psychometric properties of the two CGAs (SMAF and SF) and of the three scales used in this study (namely the depression scale- GDS, the index of severity- CIRS-G and the health-related quality of life scale- SF-36). The testing of the two admission instruments (the SMAF and the SF) was performed on their quantitative sections only. Results are presented in the next table. The number of patients involved in the testing is indicated for each test.

Testing the internal consistency and test-retest reliability for both CGAs was performed using two different samples of 15 patients who had volunteered to be interviewed twice using one of the CGAs at a 2-week interval. The internal

consistency was tested using the Cronbach Alpha on the results from the first of the two interviews with the 15 patients. Because the SMAF had already shown excellent psychometric properties in previous studies performed with similar patients in very similar types of settings and contexts of care (Desrosiers et al., 1995), the pilot study concentrated on determining the inter-rater reliability for the SF-CGA only. This testing involved a group of 10 patients who had volunteered to be interviewed twice, once by the principal investigator, and once by an HC nurse practitioner who was involved as an interviewer in the main study.

Results in Table 12 show that the internal consistency coefficient was found to be acceptable in the SF (α= 0.74) as well as in the SMAF (α= 0.76). The current coefficient in the SMAF is slightly lower than that of 0.88 previously published by the authors of the scale (Hébert et al., 1988b).

Because of the nature of the variables which were all based on intervals, the test-retest reliability was performed using a Pearson coefficient (*r*). Results show that both instruments demonstrated an acceptable level of stability over time as the coefficient related to the SMAF was 0.87 and that of the SF was 0.82. Once again, although good, the test-retest reliability coefficient in this sample of patients was slightly lower than that reported by the authors of the SMAF (Hébert et al., 1988a, 1988b; Desrosiers et al., 1995) which reached as high as 0.94. Finally, as concerns the inter-rater reliability of the SF only, the intra-class correlation (*ICC*) coefficient was preferred to the usual Cohen's Kappa

coefficient because of the nature of the variables. The *ICC* ranged as high as 0.81 showing therefore acceptable agreement between the two raters.

Table 12: Pilot work: Aspects of the reliability of instruments and scales used in the study

Properties evaluated	Admission instruments		Scales used in the study		
	SMAF	SF	GDS	SF-36	CIRS-G
Internal consistency	α^1= 0.76 *n = 15*	α= 0.74 *n =15*	*kr-20*[2]= 0.86 *n =157*	α= 0.81 *n =157*	R^3= 0.79 *n =157*
Test-retest reliability	*R*= 0.87 *n =15*	*r*= 0.82 *n =15*	*r*= 0.76 *n =15*	*r*= 0.79 *n =15*	
Inter-rater reliability		*ICC*[4]= 0.81 *N =10*			

[1] α Cronbach Alpha coefficient
[2] *kr20* = Kuber-Richardson modified coefficient
[3] *r* = Pearson coefficient
[4] *ICC*= Intra class correlation coefficient

Concerning the three other scales used in this study, the testing for internal consistency was performed using scores from the whole study sample. In the SF-36, the global alpha coefficient was 0.81. Dimension specific coefficients ranged from 0.69 in the emotional role dimension to 0.92 in the physical functioning dimension. The overall alpha coefficient is comparable to those previously reported by Ware (1993) who reviewed 14 studies and concluded that « the median of αs across studies equals or exceeds 0.80 » (p.7: 4).

As concerns the CIRS-G, internal consistency was measured as suggested by Parmalee et al. (1995), with a Pearson correlation coefficient using the CIRS-G total score with scores in individual organ systems rated as impaired. The overall *r* was 0.79 which is higher than that in the Parmalee et al. study (1995) where the global alpha coefficient reached 0.68 with all items over 0.60 at a statistical level ≤ 0.05 (Parmalee et al., 1995).

Due to the nominal nature of the variables in the GDS (Yes/No), the modified Kuder-Richardson coefficient (*kr20*) was preferred to the usual alpha. The *kr-20* coefficient reached the level of 0.86 which, although lower than that in the original Yesavage et al. study (1983; 0.94), can be considered as acceptable.

For two of the three scales used in this study, namely the SF-36 and the GDS, test-retest reliability was measured using one group of 15 patients who had volunteered to be interviewed twice by the principal investigator using the two instruments at a 2-week interval. A Pearson correlation coefficient (*r*) was used to test the correlation of scores between the two times of administration in both scales. For the SF-36, the global *r* reached 0.79 with a range of dimension-specific scores varying from 0.54 in the social functioning domain to 0.89 in the physical functioning domain.

These results are in accordance with those reviewed by Ware (1993) where test-retest coefficients were also lower than internal consistency coefficients and varied from 0.43 in the bodily pain dimension to 0.90 in physical

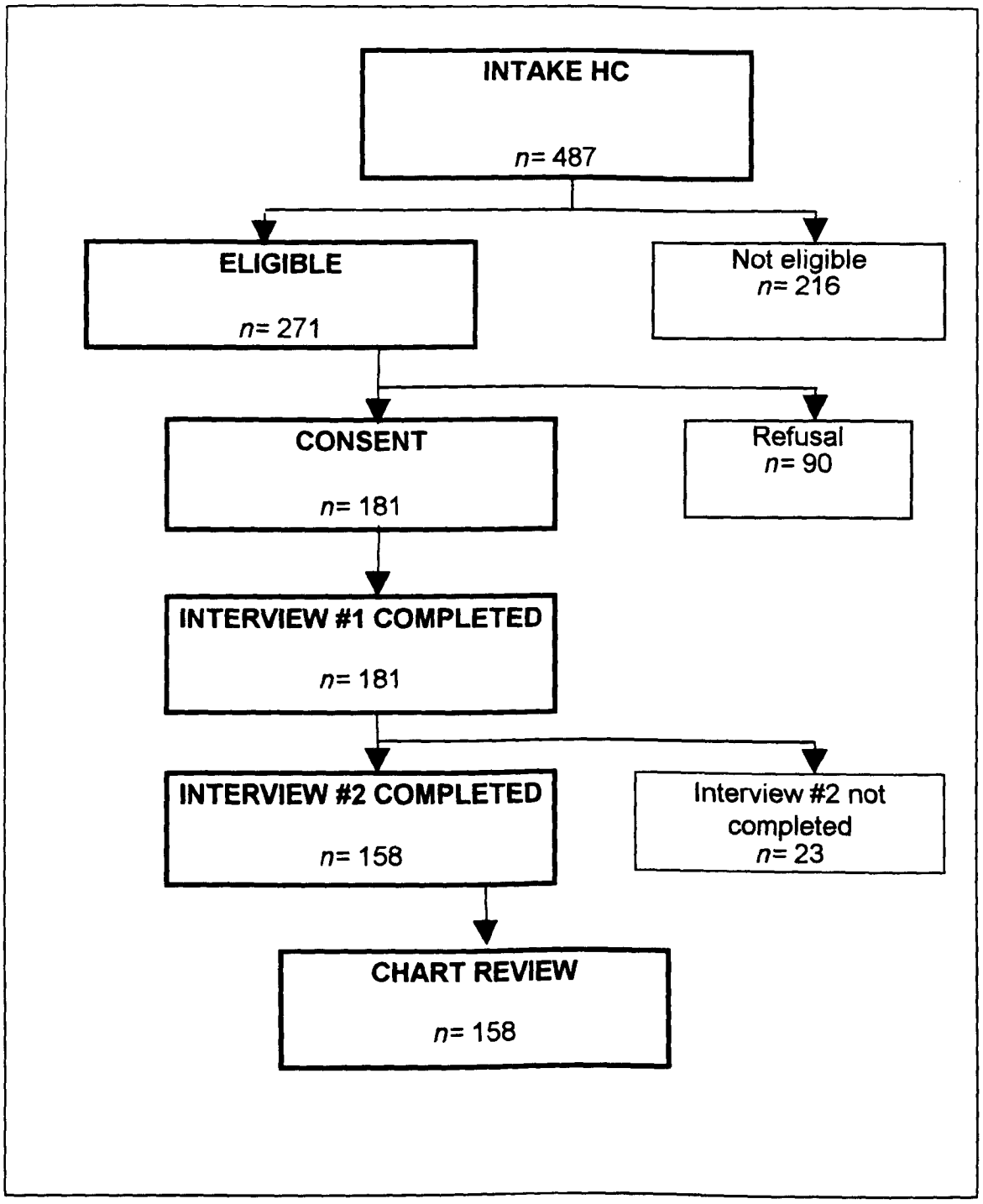
functioning. Regarding the specific results from the GDS, although they were again lower than reported in the original study (r= 0.84 in Yesavage et al., 1983), the test-retest correlation coefficient reached 0.76 indicating sufficient stability over time.

Therefore the pilot study has demonstrated that internal consistency was acceptable for all scales. The items did relate to each other indicating that the underlying construct of the scales seemed to apply in this specific sample of patients. Other reliability estimates provided by the test-retest and the inter-rater agreements also showed that all instruments or scales demonstrated acceptable stability over time or when different interviewers are involved. The instruments or scales can therefore be judged as sufficiently reliable for administration and interpretation in this study sample of patients.

3.2 DESCRIPTION OF THE STUDY SAMPLE

In Figure 1, the evolution in the study sample is described. Of the 487 patients considered for eligibility, 216 (44.4%) did not meet all six eligibility criteria. Of the 271 patients who were eligible, 181 (66.8%) agreed to participate in the study and 90 (33.2%) refused. The percentage of refusers was similar for both groups of patients. Amongst the 181 patients who agreed to participate, follow-up assessments could not be obtained for 23 (12.7%) patients, resulting in 158 (87.3%) patients who were interviewed at both baseline and at follow-up. These 158 patients constituted the final sample of the study participants.

Figure 1: Evolution of the study sample



Reasons for dropout among the 23 (12.7%) elderly patients who were lost to follow-up included: 12 (7.6%) who died during the 12-week follow-up period, five (3.2%) who were in hospital or in long-term care institutions at the time of the follow-up interview, four (2.5%) who had moved outside the HC territory, and two (1.3%) who refused to participate further. The percentage of dropouts was similar in both groups (10/70 or 14% SMAF vs. 13/88 or 14% SF group).

3.2.1 PARTICIPANTS VS. REFUSERS AND DROPOUTS

Participants were compared with refusers and dropouts and eligible only on the basis of sociodemographic characteristics and whether they lived alone, because data on depression, severity of illness and HRQOL could not be obtained at baseline (for the refusers) or at follow-up (for the dropouts). Results in Table 13 show that participants and refusers were comparable in terms of sex and age but a significantly higher percentage of refusers were living alone (3.7% participants vs. 12.3% refusers p= 0.026). In addition to reasons patients gave to explain their refusal to participate in the study, this supplementary observation might partly explain their refusal. Results presented in Table 14 show that participants were not significantly different from dropouts in terms of sex, age, living alone, depression, severity of illness or physical HRQOL. However, participants and dropouts differed significantly according to whether they lived alone and according to their mental HRQOL (as measured by the SF-36 mental component summary score MCS). There was also a significantly smaller percentage of participants living on their own in comparison with dropouts (3.7% participants living alone vs. 6.7% in dropouts).

Table 13: Characteristics of participants vs. refusers

Variables[1]	Eligible *n*=271	Participants *n*=158	Refusers *n*=90	*df*[2]	Test of significance[3]	*p*
Sociodemographic characteristics						
Sex % female	64.3%	67.1%	67.7%	1	x^2=0.012	0.911
Age	77.2	79.6 [78.9-80.5]	79.7 [78.8-80.6]	246	0.163	0.8708
Range		67-86	65-89	-	-	-
Living alone (%)		3.7%	12.3%	1	x^2=0.872	0.026

1 Means and confidence intervals [CI] for age and percentages (%) for sex and living alone.
2 *df* may vary due to missing values.
3 A *t*-test of significance is used unless otherwise specified.

Table 14: Characteristics of participants vs. dropouts

Variables[1]	Participants *n*=158	Drop-outs *n*=23	*df*[2]	Test of significance[3]	*p*
Sex Female %	67.1%	73.9%	179	x^2=0.429	0.513
Age	79.6 [78.9-80.5]	79.4 [78.3-80.5]	179	0.095	0.925
Range	67-86	66-88	-	-	-
Living alone (%)	3.7%	7.6%	1	x^2=0.563	0.042
Depression: GDS	15.8 [14.9-16.7]	17.1 [16.4-17.8]	170	-1.036	0.301
Illness severity: CIRS-G	1.4 [1.26-1.54]	1.8 [1.5-2.1]	174	0.862	0.110

[1] Means and confidence intervals [CI] for all variables except sex and living alone where a percentage (%) was used.
[2] *df* may vary due to missing values.
[3] A *t*-test of significance is used unless specified otherwise.

Table 14 (cont'd): Characteristics of participants vs. dropouts

Variables[1]	Participants *n*=158	Drop-outs *n*=23	*df*[2]	Test of significance[3]	*p*
HRQOL: SF-36					
Physical Functioning	20.9 [17.8-24.0]	20.0 [18.6-21.4]	179	0.189	0.850
Role – Physical	17.9 [13.6-22.2]	17.4 [13.4-21.4]	178	0.097	0.924
Bodily Pain	44.3 [39.6-49.0]	40.5 [37.0-44.0]	177	1.069	0.250
General Health	42.5 [39.6-45.4]	46.2 [42.9-49.5]	176	0.822	0.412
Vitality	30.5 [27.5-33.5]	33.9 [30.5-37.3]	176	-0.737	0.462
Social Functioning	37.8 [33.2-42.4]	43.1 [39.3-47.9]	171	-0.778	0.438
Role – Emotional	37.1 [34.7-41.5]	52.8 [48.7-52.9]	178	-1.487	0.114
Mental Health	48.8 [45.6-52.0]	53.1 [50.2-54.0]	175	-0.918	0.360
Physical Component Summary (PCS)	29.3 [27.9-30.7]	26.1 [24.8-28.3]	175	1.479	0.141
Mental Component Summary (MCS)	44.3 [43.5-45.1]	37.9 [36.1-39.6]	171	-0.299	0.028

1 Means and confidence intervals [CI] for all variables.
2 *df* may vary due to missing values.
3 A *t*-test of significance is used unless specified otherwise.

It is important to point out that besides moving to another area, the other observable explanations for loss at follow-up were mainly that the patients had died or had required long-term placement. It is reasonable to believe that the observed lower HRQOL coupled to the fact of living alone might also help explain why these patients dropped out.

3.2.2 REPRESENTATIVENESS

This section seeks to determine if the patients participating in this study could be considered as representative of the home care population from which they were drawn, of the general elderly population in Quebec, or of other elderly patients who have been assessed in previous studies while using the same instruments. Therefore, results from this sample of patients are compared with those from three specific groups of patients: the eligible patients; the general elderly population in Quebec; elderly patients who had been evaluated using the same instruments.

3.2.3 COMPARISONS WITH THE POPULATION OF REFERENCE AND OTHER HOME CARE PATIENTS IN QUEBEC

As previously reported, women made up 67.1% of the sample patients (Table 13). The percentage of women eligible for the study was slightly lower (n=271; 64.3% women) but the percentage of women in the sample was still lower than the percentage of women admitted to home care programmes in Quebec in 1992 (72%; Regional Health Authorities: Quebec; Eastern Townships

and Montreal, unpublished data). The percentage of women eligible for the study is only slightly lower than the percentage of women over 65 in the general population of Quebec (65%; Pelletier, 1996).

Concerning the mean age, patients in the sample had a mean age two years older than did eligible patients (*n*= 271: 79.6 years vs. 77.2 years) and three years older than did all elderly patients (men and women combined) aged 65 years and over admitted to home care programmes in Quebec in 1992 (79.6 vs. 76.4 years old; Regional Health Authorities: Quebec; Eastern Townships and Montreal, unpublished data).

3.2.4. COMPARISONS WITH PREVIOUS STUDIES

Results on age and sex in the home care participants in this study were compared with those obtained in four samples of elderly persons in previous studies. The four studies selected for comparison were those that reported both age and gender when examining the impact of CGAs in home care settings. As shown in Table 15, the percentage of female participants in this study was the second highest and the mean age of the participants was slightly older (1.3 - 6.9 years older) than for participants in each of the four studies used in the comparisons.

Table 15: Comparisons with previous studies: gender and age

Study	*n*	% Female	Mean Age (SD)
Present study	158	67.1%	79.6 (7.2)
Fabacher et al. (1994)	254	2.3[1]%	72.7 (5.2)
Karppi & Tilvis (1995)	312	78.0%	78.3 (4.5)
Pathy et al. (1992)	725	59.6%	73.4 (6.4)
Thomas et al. (1993)	120	46.0%	76.5 (5.4)

[1] The sample of patients in the Fabacher et al. study was a predominantly male sample composed of community-living veterans not currently receiving health care at the Sepulveda Veterans hospital in the US.

In Table 16, it can also be seen that the GDS depression scores in the study sample were comparable with those reported in other studies of elderly patients living and cared for in the community.

Table 16: Comparisons with previous studies: GDS scores

Study	*n*	GDS Means (SD)
Present study	158	15.8 (5.9)
Burns et al. (1995)	128	13.5 (3.2)
Burrows et al. (1995)	37	13.7 (n/a)
Morishita et al. (1995)	87	16.9 (4.6)
Rubenstein et al. (1994)	414	17.9 (2.8)

Finally, as concerns health-related quality of life measured using the SF-36, results from the study sample were compared with those from 12 other groups of patients (Table 17). Comparison groups included: the general population in the U.S.; two age groups of elderly people in the U.S.; two chronically-ill patient groups in the Medical Outcomes Study (MOS) suffering from common medical problems such as congestive heart failure or chronic obstructive pulmonary disease (COPD) with hypertension (Ware et al., 1993, 1994); a group of elderly Californian veterans who were assessed using CGAs and interviewed using the SF-36 after 30 days of home care (Siu et al., 1996); and two groups of British community-resident elderly people who had reported either a long-standing disability or an admission to hospital within the past year (Lyons, Perry & Littlepage, 1994). First, it can be observed that the lowest SF-36 scores of all were found in the present study sample of elderly patients. From the Ware study results (1993, 1994), it can be seen that HRQOL scores decrease with age and with the presence of chronic conditions. Given the mean age (79.6 years) of this study sample, and that the severity of illness scores (Table 14) showed that they were in relatively poor health, lower scores could be expected. The differences between the scores of this sample and the second or third lowest scores reported in the other studies vary from 0.9 on the general health perception dimension (42.5 in this study vs. 43.4 in Lyons et al., longstanding disability group) to 22.4 on the role emotional dimension (37.8 in this study vs. 60.2 in Lyons et al., for the patients who had been admitted to a hospital in the last year).

Table 17: Comparisons with previous studies: SF-36 scores

Studies		Means SF-36 mean scores									
	n	PF	RP	BP	GH	VT	RE	SF	MH	PCS	MCS
Present study	**181**	**20.9**	**17.9**	**44.3**	**42.5**	**30.5**	**37.8**	**37.0**	**48.8**	**29.3**	**37.9**
Ware et al. (1993, 1994; U.S.)	**2474**	**84.1**	**89.6**	**75.1**	**71.9**	**60.8**	**83.2**	**81.2**	**74.7**	**50.0**	**50.0**
General population age 64-74	442	69.4	64.5	68.5	62.6	59.9	80.6	81.4	76.9	43.3	52.7
General population age ≥75	264	53.2	45.3	60.9	56.7	50.4	73.9	63.2	74.0	37.9	50.4
MOS: Congestive heart failure	216	47.5	34.4	62.7	47.1	44.3	71.3	63.7	74.7	34.5	50.4
MOS:COPD and hypertension	85	56.9	34.4	54.8	45.9	45.0	71.8	59.7	68.1	35.9	47.7
Siu et al. (1996; CGA patients U.S.)	**178**	**33.5**	**65.0**	**69.1**	**54.8**	**44.7**	**83.4**	**57.3**	**75.0**	**n/a**	**n/a**
Lyons et al. (1994; U.K.)											
Long-standing disability present	131	38.8	37.1	51.0	41.6	39.7	68.2	59.2	66.8	n/a	n/a
Hospital admission in last year	33	36.1	23.4	51.7	43.4	37.6	60.2	52.7	66.6	n/a	n/a

[1] **PF**: Physical functioning
RP: Role (physical)
BP: Bodily pain
GH: General health perception
VT: Vitality
RE: Role (emotional)
SF: Social functioning
MH: Mental health
PCS: Physical component summary score
MCS: Mental component summary score

Finally, the observed HRQOL scores in the patients from this study most closely resemble those reported by Lyons et al. (1994) in patients who had long-standing disabilities or had been admitted to a hospital in the previous year.

As concerns the level of severity of illness observed in the patients in this study, results reported in Table 18 show that it is very similar to that of elderly persons in other samples receiving ambulatory care in the U.S. (Parmelee et al., 1995) or receiving HC in Ireland (Miller et al., 1992). Both study samples were constituted of community-dwelling elderly outpatients. No study reporting the use of the CIRS-G in Quebec was available.

Table 18: Comparisons with previous studies: CIRS-G scores

Studies	***n***	**CIRS-G Mean (SD)**
Present study	**158**	**1.8 (0.5)**
Miller et al. (1992) (Age 84.1 years)	**75**	**1.5 (0.4)**
Medical group 1 (older sub-group)	20	2.0 (0.5)
Medical group 2 (younger sub-group)	20	1.8 (0.5)
Healthy control group	35	1.2 (0.2)
Parmelee et al. (1995) (Age 79.4 years)	**439**	**1.6 (0.3)**

In conclusion, from the comparisons made between the patients in this study and those who had been screened as eligible or those in other samples of elderly patients (who either belong to the same population in Quebec or to other groups of elderly persons who had been assessed using the same instruments),

four conclusions can be drawn. First, as concerns age and gender, it would be accurate to state that elderly patients in this study resemble the general population of elderly HC patients in Quebec. Although this sample was slightly older (79.6 years old vs. 77.2 and 76.4 years old respectively for eligible patients and general HC patients in Quebec) and included a higher proportion of women (67%) than for eligible patients (64.3%) and a lower proportion than for those in HC in Quebec (69%), these slight differences can certainly not be considered sufficient to have created a definite bias in favour of older or female patients.

Second, from the comparisons made between this sample and 12 other samples of patients who were assessed using the SF-36, it was seen that this sample of patients reported the lowest or second-lowest scores on all nine individual dimensions as well as on both component summary scores. These findings could indicate that there is a definite trend towards lower scores in this group of patients. This interpretation will be taken into consideration when discussing the possibility of making generalisations drawn from these findings.

Third, as concerns the state of depression and the severity of illness, results from this study's patients can be seen as fairly similar to those for the patients participating in the studies used in comparison. Specifically, scores on the GDS, were identical to those published by Vézina and his colleagues (1992) in Quebec. Their study included patients who were currently receiving day care provided by similar community care centres. When comparing the mean score on the GDS in this study to the mean score of results provided by all other studies, it is apparent that results were again almost identical (15.8 in this study vs. a mean

of 16.0 for all studies combined). The same conclusion applies for the scores on the severity of illness scale. In this study's patients the score is greater than that in a healthy control group but fairly similar to medical groups or elderly patients. When comparing the score on the CIRS-G in this study to the mean score of results provided by all other studies, it is apparent that results were again almost identical (1.8 in this study vs. a mean of 1.7 for all studies combined).

Finally, comparisons made between patients in this study and other non-related samples of patients certainly indicate that most of the scores observed (except for HRQOL which is lower) fit in the direction of scores to be expected in elderly patients from comparable ambulatory settings. Furthermore, when coupled with the conclusions drawn from the refusers and dropouts, it can be deduced that the patients in this study presented a general profile that is quite compatible with HC patients in Quebec as well as with other samples of patients in similar age groups in similar settings. Except for HRQOL, there is therefore no major reason to believe that baseline results in the study patients were biased to a point that they could not be discussed in the light of previous findings.

3.3. BASELINE COMPARABILITY ANALYSES

In this section, patients in the long (SMAF) and short (SF) form CGA groups are compared on all baseline variables, including sociodemographic characteristics, the fact of living alone, depression, severity of illness and HRQOL. These variables serve as indicators of normative needs in relation to health. They are also compared on the basis of the type and intensity of care

received after being assessed with one of the CGA process characteristics. These variables also relate to normative needs in relation to the care from which patients should benefit. Finally, they are also compared on the basis of the structural characteristics of the programmes they were admitted to. These last variables are viewed as possible confounders which will be used in later associations with the benefits patients demonstrate.

3.3.1 PATIENT CHARACTERISTICS

As shown in the results presented in Table 19, there were no significant differences between the two CGA groups in terms of age, gender, living alone, depression or severity of illness scores. Regarding depression, the percentage of patients was similar in all three levels of depression when using the suggested cut-offs of 11 and 21 as indicators of no, mild or clinical depression (Yesavage, 1983). The results presented in Table 20 and Figure 2 show that there were no significant differences between the two CGA groups for six of the eight SF-36 dimension scores: physical functioning, physical role, bodily pain, general health perception, social functioning and emotional role. However, the SMAF group showed significantly lower scores for two individual dimensions: vitality and mental health. Although not directly comparable, these results are consistent with findings from the Provincial Health Survey (Santé Québec, 1995) which found higher psychological distress and lower satisfaction with life in elderly community residents in Montreal (where the SMAF is used) compared to those residing in the Eastern Townships region (where the SF is used).

Table 19: Baseline comparability analyses: Sociodemographic characteristics, depression and severity of illness of patients in SMAF vs. SF CGA

Variables[1]	SMAF *n*=70	SF *n*=88	*df*	Test of significance[2]	*p*
Sociodemographic characteristics					
Gender %female	67.1%	69.3%	1	x^2=0.045	0.504
Age	79.8 [78.8-80.8]	79.6 [78.5-79.6]	157	-0.855	0.394
Range	67-84	68-86			
Living alone	3.87%	3.62%	1	x^2=0.032	0.624
Depression (GDS)	16.2 [15.3-17.1]	15.5 [13.6-16.4]	149	-0.667	0.506
% No depression (scores 0-10)	21.9%	22.8%	2		
% Mild depression (scores 11-20)	49.5%	36.7%	2	x^2=3.355	0.187
% Clinical depression (scores 21-30)	28.6%	40.5%	2		
Severity of illness (CIRS-G)	1.31[1.24-1.36]	1.42 [1.35-1.49]	156	0.936	0.340

1 Means and confidence intervals [CI] for all variables except gender, depression levels and living alone (%)

2 A *t*-test of significance is used unless specified otherwise.

Table 20: Baseline comparability analyses: SF-36 scores for patients in SMAF vs. SF CGA

Variables[1]	SMAF [CI] *n*=70	SF [CI] *n*=88	*df*[2]	Test of significance[3]	*p*
Physical Functioning	23.8 [20.1-27.5]	18.6 [15.7-21.5]	157	1.547	0.124
Role – Physical	19.3 [16.3-22.3]	17.0 [14.3-19.7]	156	0.490	0.626
Bodily Pain	48.9 [45.0-23.8]	40.7 [35.7-45.7]	155	1.612	0.109
General Health	43.7 [40.5-46.9]	41.6 [38.5-44.7]	154	0.624	0.531
Vitality	26.6 [23.5-29.7]	33.5 [30.3-36.7]	154	2.103	0.037
Social Functioning	37.7 [35.4-40.0]	37.9 [35.4-40.4]	150	0.007	0.960
Role – Emotional	38.6 [31.6-45.6]	35.8 [28.8-42.8]	156	0.400	0.690
Mental Health	44.4 [41.0-47.7]	52.1 [48.8-55.4]	153	2.209	0.029
Physical Component Summary (PCS)	31.2 [29.6-33.8]	27.8 [26.3-28.3]	153	2.102	0.037
Mental Component Summary (MCS)	36.3 [34.2-38.4]	39.1 [37.3-40.8]	153	1.378	0.171

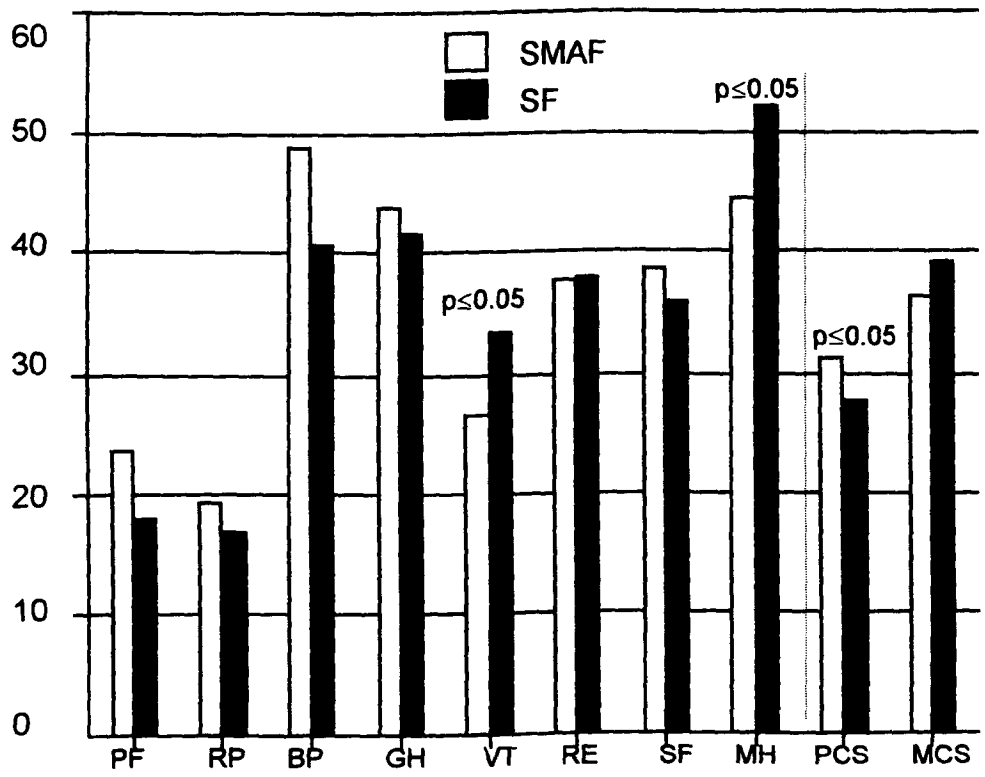
1 Means and confidence intervals [CI] for all variables

2 *df* may vary due to missing values.

3 A *t*-test of significance is used unless specified otherwise.

Also, the SMAF group showed significantly higher baseline scores on the physical component summary score than the SF group. These results are also consistent with findings from the Provincial Health Survey (Santé Québec, 1995) which found fewer physical limitations in elderly community residents in Montreal (where the SMAF is used) compared with those residing in the Eastern Townships region (where the SF is used).

Figure 2: Baseline SF-36 scores (ordinate) of patients for all dimensions of the SF-36 (abscissa) SMAF vs. SF CGA



3.3.2 CARE RECEIVED DURING FOLLOW-UP

As shown in Table 21, there were no differences between the groups concerning the type of care received and only minor and non-significant differences in the overall intensity of the care. In both groups, the type of care received was similar and elderly participants received an average of 21-22 visits during the 12-week follow-up period. The actual package of care received was measured by the number of times different types of care were received during the 12-week follow-up. The types of care were those registered in the classification system codes used in the HC programmes and included **medical care** in the form of initial medical examination comprising diagnosis and prescription of care, tests or medication, follow-up medical examination comprising prescription of care, tests or medication and referral. It also included **nursing care** in the form of needs assessment, health education, physical care, psychosocial care and referral. **Social services** included all services related to psychotherapeutic care for individuals or family and psychosocial intervention (community and network). **Rehabilitative care** included maintenance or development in ADLs and IADLs, and home adaptation. Finally, **home help** includes personal hygiene, meals, shopping, house cleaning, and transportation to and from health services.

3.3.3 STRUCTURAL CHARACTERISTICS

Table 22 shows that there were no significant differences between the two CGAs for 1995 per capita expenditure on HC and on staff mix.

Table 21: Baseline comparability analyses: Care received during follow-up for patients in SMAF vs. SF CGA

Variables[1]	SMAF *n*=70	SF *n*=88	*df*	Test of significance[2]	*p*
Type of professional care received					
Medical care (HC physicians)					
Mean number of visits [CI]	1.94 [1.7-2.1]	2.03 [1.7-2.3]	156	1.108	0.645
% of patients visited	68.6%	73.9%			
Nursing care					
Mean number of visits [CI]	12.9 [11.0-14.8]	12.5 [11.2-13.8]	157	1.023	0.630
% of patients	100%	100%			
Social services					
Mean number of visits [CI]	1.4 [1.0-1.6]	1.6 [1.3-1.8]	157	0.946	0.617
% of patients visited	50.1%	47.4%			
Rehabilitative care					
Mean number of visits [CI]	2.8 [2.3-3.3]	3.2 [2.5-3.9]	157	0.365	0.421
% of patients visited	52.4%	32.8%			
Home help received					
Mean number of visits [CI]	13.6 [10.1-16.3]	12.0 [9.6-14.5]	157	0.837	0.559
% of patients receiving home help	87.2%	81.6%			
Overall intensity of professional care received					
Total number of visits during follow-up	30.1 [22.2-37.9]	29.0 [25.8-32.3]	157	1.001	0.622

1 Means and confidence intervals [CI] and percentages (%)

2 A *t*-test of significance is used unless specified otherwise.

Table 22: Baseline comparability analyses: Mean [CI] of budget and staff mix in SMAF vs. SF CGA

Variables	SMAF *n*=70	SF *n*=88	*df*	Test of significance[1]	*p*
Budget 95[2]	363 [348-378]	348 [336-360]	7	1.231	0.737
Staff mix[3]	0.23 [0.22-0.24]	0.23 [0.23-0.24]	7	x^2= 0.018	0.930

1 A *t-test* of significance is used unless specified otherwise.
2 Expenditure per capita ≥65: $CDN.
3 % nurse on team.

3.4 MEASURE OF THE BENEFITS IN PATIENTS

In order to determine if patients benefited from the assessment procedures during follow-up, two sets of variables were analysed: change in HRQOL and service use. First, results are presented for the whole sample of 188 patients, then, results are analysed in order to determine if any group effect was observable.

Results presented in Table 23 show that there were significant changes in HRQOL between admission and the 12-week follow-up for seven of the eight SF-36 individual dimensions: physical functioning, role-physical, general health perceptions, vitality, social functioning, role-emotional and mental health, and on both summary scores. The only SF-36 individual dimension for which no significant improvement over time was shown is bodily pain. Changes were consistently in a positive direction, with elderly participants reporting better scores at follow-up than at baseline. For both groups combined, the level of change varied considerably between dimensions (range = 3.43 to 10.93). Higher gains were reported for social functioning (+10.74) and role functioning (emotional; +10.93). As shown, improvements on the physical and mental component summary scores were both statistically significant (+4.65 and +4.47, respectively; both *ps* $\leq$0.05).

Results presented in Table 24 also show that there was a similar use of services outside HC during the 12-week follow-up. All *p*-values from the paired *t*-tests were lower than the significance level of 0.05 adopted for this study.

Table 23: Change in SF-36 scores [CI] from baseline to 12-week follow-up: both groups combined

SF-36 dimensions[1]	Baseline scores[CI]	Follow-up scores[CI]	Differences [CI]	*df*[2]	*Paired t-test*	*p*
Physical Functioning	20.9 [17.7-24.2]	25.9 [22.0-29.8]	4.6 [0.8-8.4]	157	2.42	0.016
Role – Physical	17.9 [13.3-22.5]	28.0 [25.3-30.7]	9.9 [7.4-12.4]	156	2.65	0.009
Bodily Pain	44.3 [39.3-49.8]	47.9 [42.5-53.3]	3.43 [-1.7-5.9]	154	1.30	0.195
General Health	42.5 [39.4-45.6]	47.1 [43.2-51.0]	4.07 [0.4-7.8]	154	3.66	0.039
Vitality	30.5 [27.3-33.7]	38.1 [36.0-40.2]	7.32 [3.4-11.2]	154	3.73	0.003
Social Functioning	37.8 [33.7-41.9]	48.9 [42.6-54.9]	10.74 [5.0-16.4]	157	3.58	0.001
Role – Emotional	37.1 [30.1-44.2]	49.2 [44.8-53.6]	10.93 [3.5-18.3]	156	2.41	0.017
Mental Health	48.8 [45.4-52.2]	56.2 [52.3-60.1]	6.45 [2.8-10.2]	153	3.39	0.015
Physical Component	29.3 [27.8-30.8]	35.0 [33.8-37.2]	4.65 [3.4-5.9]	153	3.71	0.001
Mental Component	44.3 [42.5-46.1]	49.2 [47.1-51.3]	4.47 [3.5-5.5]	153	4.08	0.001

1 Means [CI] for all variables

2 *df* may vary due to missing values

Table 24: Service use during the 12-week follow-up: Means [CI]: both groups combined

Service use variables[1]	Frequency of service use [CI]	*df*[2]	Paired *t-test*	*p*
Nights in institutions	**3.36 [1.96-4.09]**	**156**	**5.69**	**0.001**
Number of nights – hospital	4.27 [1.72-6.82]	156	5.38	0.001
Number of nights – nursing home	2.34 [0.86-3.82]	157	3.10	0.002
Visits to doctors outside HC	**0.62 [0.43-0.81]**	**157**	**7.67**	**0.001**
Number of visits – medical clinic	0.75 [0.50-1.00]	157	8.01	0.001
Number of visits – community clinic	0.56 [0.27-0.75]	157	4.49	0.001
Number of visits – outpatient dept	0.95 [0.76-1.14]	157	7.97	0.001
Number of visits – emergency dept	0.21 [0.12-0.30]	157	4.74	0.001

1 Means [CI] for all variables.

2 *df* may vary due to missing values.

Therefore, results from the analyses performed on the entire sample show that statistically significant improvements were observable in almost all individual dimensions of the SF-36, but most important, highly statistically significant improvements were also observable for both summary components (PCS and MCS). We can now proceed with the examination of group effects.

3.4.1 GROUP EFFECTS

3.4.1.1 HEALTH-RELATED QUALITY OF LIFE

In order to examine if the changes observed from baseline to 12-week follow-up in HRQOL were attributable to CGA groups, results were compared between groups using an *F*-test which examines variation between and within groups. These comparative results are presented in Table 25 and Figure 3. They show that no statistically significant differences were observable for seven of the eight dimension scores. The only statistically significant difference between groups for an individual dimension was observable for the general health perception dimension where the group exposed to the short form of CGA (SF) reported a significantly greater positive change than the group exposed to the long form (SMAF). It is also important to mention that the physical role-individual dimension was close to significance level. Again, the group exposed to the short form of CGA (SF) reported a greater positive change than the group exposed to the long form (SMAF). Moreover, although not statistically significant, important differences appear between groups for social functioning (6.43 vs. 14.16) and emotional role (3.38 vs. 16.86), both showing greater improvement for the short form CGA group (SF).

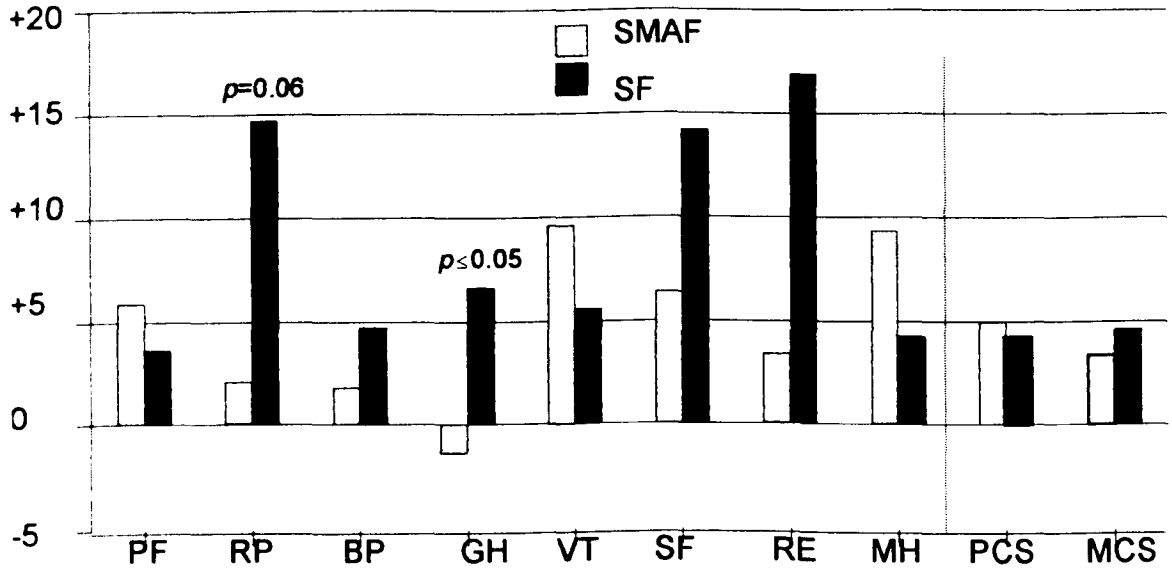
Table 25: Group differences: Means (SD)[CI] of SF-36 change scores for patients in SMAF vs. SF CGA

SF-36 scale [1]	SMAF *n*=70	SF *n*=88	*df*[2]	Test of significance[3]	*p*
Physical Functioning	5.93 (25.3) [1.96-9.90]	3.58 (22.3) [0.1-7.1]	157	-0.612	0.541
Role – Physical	2.14 (36.8) [-3.5-7.7]	14.36 (4.5) [7.4-21.6]	156	1.864	0.064
Bodily Pain	1.77 (33.1) [-4.5-7.1]	4.71 (32.6) [-0.5-9.9]	154	0.552	0.581
General Health	-1.39 (23.1) [-5.0-3.0]	6.55 (22.4) [3.1-10.1]	154	2.164	0.032
Vitality	9.62 (22.5) [6.1-13.2]	5.57 (25.8) [1.4-9.6]	154	-1.024	0.307
Social Functioning	6.43 (40.0) [0.26-12.6]	14.16 (32.6) [8.9-19.5]	157	1.282	0.202
Role – Emotional	3.38 (56.2) [-5.5-12.2]	16.86 (56.6) [7.9-25.6]	156	1.477	0.142
Mental Health	9.27 (21.6) [5.9-12.7]	4.34 (24.9) [0.38-8.2]	153	-1.284	0.201
Physical Component Summary (PCS)	4.98 (8.4) [4.3-5.6]	4.40 (7.9) [3.2-5.7]	153	0.500	0.736
Mental Component Summary (MCS)	4.28 (14.0) [2.1-6.4]	4.62 (12.3) [2.7-6.6]	153	0.141	0.876

1 Means (SD)[CI] for all variables
2 *df* may vary due to missing values.
3 An *F-test* of significance is used.

Overall, participants in the short form group (SF) reported greater improvement on five of the eight individual dimension scores. However, these clinically important, but in most cases statistically non-significant differences in favour of the SF group were not of sufficient magnitude to produce significant differences either in the physical or mental summary scores. In conclusion, the differences observed between groups from entry to follow-up were comparable for the two component summary scores as well as for seven of the eight individual dimension scores that were used. The two exceptions worth noting revealed a trend towards fewer gains for the SMAF group on role functioning due to the physical limitations dimension (p =0.064) and a significantly greater improvement on the general health perception for the group exposed to the SF.

Figure 3: Change scores (axis *y*) from entry to follow-up in all dimensions of the SF-36 (axis *x*): SMAF vs. SF

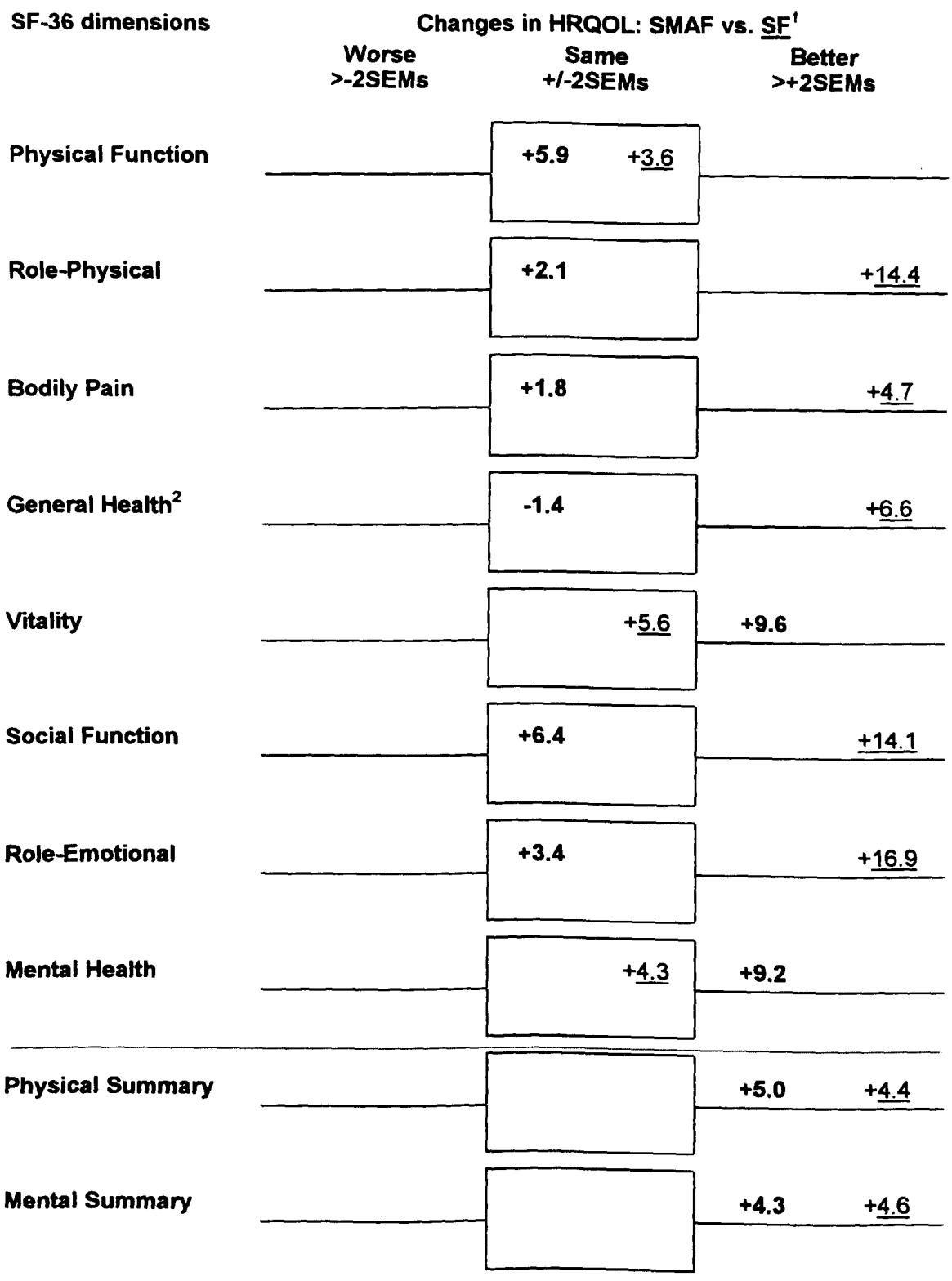


In order to better understand the clinical meaning of these changes, the categorisation suggested by Ware and colleagues (Ware et al., 1994) was used, i.e. a positive change score greater than two standard errors of measurement (SEM) defines patients as 'better'; a negative change score greater than two SEMs defines patients as 'worse'; and a change score within two SEMs defines patients as 'stayed the same'. Using this categorisation, it can be argued that from a clinical point of view (despite the statistical evidence) less improvement can be found in the SMAF group than the SF group.

Table 26 summarises the clinical interpretation of change scores for both groups based on Ware's classification. First, these results show that HRQOL did not clinically worsen in either group of patients. Second, the SMAF group reported improvement for two of the eight individual dimensions whereas the SF group reported improvement for five of them. Finally, as concerns the summary scores, results show that both groups improved over time in both scores.

Therefore, it can be concluded that the SF group reported more clinical improvement (as assessed by values greater than two SEM) than the SMAF group did. However, as only one of these changes was statistically significant, these findings must be interpreted with caution.

Table 26: Clinical interpretation of changes in HRQOL - SMAF vs. SF



1 SMAF scores are reported in **bold** and SF scores are reported underlined

2 $p \leq 0,05$

3.4.1.2 SERVICE USE

In order to determine if service use was different between CGA groups of patients, an analysis of variance was performed on each of the service use variables used in this study. Results presented in Table 27 show that there were no significant differences between CGA groups for any of the six service use variables. Patients who completed the long form of CGA (SMAF) used the same type and amount of care than those who completed the short form CGA (SF). However, the difference between the number of nights spent in nursing homes during the 12-week follow-up period nearly approached significance (p= 0.56). The SMAF group reported more nights spent in nursing homes than did the SF group.

3.4.1.3 EXPLORATORY COSTS

On an exploratory basis only, the costs attributed to the use of a long or short form CGA are presented in Table 28. Using 1995 admission figures for the Eastern Townships HC programme, more than 2,000 hours were saved with the use of the short form CGA. Monetary savings related to using a short form CGA could have amounted to approximately CDN $85,000 (approximately £37,000). At the same time, 1995 admission figures for the Montreal-Centre HC programme show 18,000 more hours were spent using the long form CGA. Expenditures of more than CDN $720,000 (approximately £325,000) for personnel are attributable to the use of the long form of CGA.

Table 27: Group differences: Means [CI] of service use variables for patients in SMAF vs. SF

Service use variables[1]	SMAF *n*=70	SF *n*=88	*df*[2]	Test of significance[3]	*p*
Nights in institutions					
Number of nights – hospital	5.00 [4.40-6.63]	3.67 [3.17-4.15]	156	-0.827	0.874
Number of nights – nursing home	4.15 [2.05-6.25]	0.99 (0.39-1.89]	157	-2.183	0.056
Visits to doctors outside HC					
Number of visits – medical clinic	0.83 [0.64-1.02]	0.68 [0.49-0.87]	157	-0.781	0.436
Number of visits – community clinic	0.20 [0.09-0.32]	0.17 [0.15-0.19]	157	1.009	0.314
Number of visits – outpatient dept	0.87 [0.60-1.04]	1.01 [0.84-1.18]	157	0.611	0.541
Number of visits – emergency dept	0.19 [0.12-0.26]	0.22 [0.11-0.33]	157	0.468	0.642

1 Means (SD) for all variables

2 *df* may vary due to missing values

3 An *F-test* of significance is used

PAGE
MISSING IN
ORIGINAL

3.4.1.4 MULTIPLE REGRESSION ANALYSES

Before examining the association of different variables with changes in HRQOL and with service use, it must be remembered that *paired t-tests* were performed on all HRQOL and service use outcomes across both CGA groups in order to verify if change in HRQOL from baseline to follow-up and service use were significant. Since all were found to be significant, multiple regression analyses could be carried out.

Four final multiple regression models were tested. One principal explanatory variable was used in each of in these four models: (i) the measure of change over time in the SF-36 PCS score; (ii) the measure of change over time in the SF-36 MCS score; (iii) the measure of service used indicated by the overall number of nights spent in health care institutions (independent of setting) during follow-up; and (iv) the measure of service used indicated by the overall number of visits to doctors during that period (independent of setting).

The development of these four models included four specific steps. First, the association of the explanatory variable with the variation in the criterion was examined by itself using correlational analyses. Second, leaving (forcing) the explanatory variable in each model, different co-explanatory variables were included one-by-one as predictors or co-explanatory variables. Although multiple regression in this study was based on a relatively small number of co-explanatory variables and was submitted to a relatively controlled effect size, this one-by-one step strategy was preferred to stepwise analysis in order to eliminate

three types of possible errors common when using a stepwise procedure (Thompson; 1995): inflation of the proportion of the explained variance, underestimation of the explanatory power or correlation of certain variables among others and finally, underestimation of sampling error. As indicated in the previous chapter, whenever a co-explanatory variable was significantly associated with the explanatory one and explained more than 15% of the variance by itself, it was kept to be used in a final model.

Third, prior to performing analyses, the assumptions recommended for testing by Kleinbaum, Kupper and Miller (1988: 45-48) in multiple regression analysis were checked. It was found that all variables were significantly different from zero. The *existence of values with a distribution having finite mean and variance over zero* was therefore considered to be met. It was also found that *the statistical independence of Y-values* was not fully met as some of the co-explanatory variables (Y) were significantly correlated to one another and were not therefore to be simultaneously included in the final models. This was the case for: MCS vs. PCS scores (r= 0.2951; p= 0.0007); MCS score vs. DGS depression score (r= -0.3989; p= 0.0001); MCS score vs. CIRS-G severity of illness score (r= -0.1887; p= 0.0240); GDS depression score vs. age (r= 0.2243; p= 0.0061); budget vs. staff mix (r= 0.4359; p= 0.0001); staff mix vs. number of nights spent in hospital (r= -0.271; p= 0.0006). The criteria for *linearity* were met, which assumes that the mean value of the criterion variable (X) for each combination of the predictors (Y_1, Y_2,..., Y_k) is a linear function of X. The criteria for *homoscedasticity* was also met. The variance of each of the criterion variables X is similar for any fixed predictive ones Y_1, Y_2,..., Y_k. Finally, the

relationship between two criterion variables and the predictive variables were examined for *normal distribution*. When fitted in relationship to the predictor variables, the two service use variables [number of nights in health care institutions and number of visits to doctors] did not display normal distribution. Therefore, both variables were transformed using a log transformation. After transformation, a normal distribution was found for all four criterion variables when associated with the co-explanatory variables. Transformed variables were then used in all regression models.

Fourth, the four final models were tested using the criterion variable and the co-explanatory variables which met the above criteria of being significantly associated in explaining at least 15% of the variance. The results of the four final models are presented in the following tables.

Specific results from the final model of the effect of the co-explanatory variables on changes in physical HRQOL (PCS score on the SF-36) are presented in Table 29. Two predictors were associated significantly with the criterion variable. Lower levels of depression at baseline were associated with improvement in physical HRQOL during the 12-week follow-up. This model explains as much as 34% of the variance in changes in physical HRQOL and reached a high level of significance [p=0.0001].

Results from the final model of the effect of the co-explanatory variables on changes in mental HRQOL are presented in Table 30. Two predictors, depression and baseline physical HRQOL, were associated significantly with the

criterion variable. Lower levels of depression and better physical HRQOL at baseline were associated with improvements in mental HRQOL at the 12-week follow-up. The model explains 24% of the variance in changes in mental HRQOL and also reached a high level of significance [p=0.0002].

Results from the model of the effect of the co-explanatory variables on the number of nights spent in institutions during follow-up are presented in Table 31. Two variables, intensity of care and staff mix, were associated significantly with more nights in health care institutions. The direction of the standardised coefficient estimate (β) shows that a greater intensity of HC and a lower percentage of nurses on HC teams were associated with more nights in health care institutions. The model explains 20% of the variance in this service use variable and had a high level of significance [p=0.0001]. Finally, results from the fourth final model of the effect of the co-explanatory variables on visits to doctors during the 12-week follow-up period are presented in Table 32. One predictor, depression and baseline mental HRQOL, was associated significantly with the number of visits to doctors. The direction of the standardised coefficient estimate (β) shows that a higher level of depression was associated with more visits to doctors during the study period. The model explains 19% of the variance in the number of visits to doctors and reached significance [p=0.0134].

Table 29: Multiple regression analysis: Changes in SF-36 Physical component summary scores (n=158)

Parameters	(β) Standardised coefficient estimate	Unstandardised estimate	Test for null hypothesis	p
Intercept	0.0000	-12.454	-1.451	0.149
CGA	-0.0473	-0.8913	-0.588	0.558
Patient characteristics				
Depression (GDS)	-0.3788	-0.6071	-4.207	0.001
		Full model R^2: 0.3413 *F* value: 2.414 *p*: 0.0001		

Table 30: Multiple regression analysis: Changes in SF-36 scores Mental component summary scores (n=158)

Parameters	(β) Standardised coefficient estimate	Unstandardised Estimate	Test for null hypothesis	p
Intercept	0.0000	-2.7216	-0.648	0.518
CGA	-0.0535	-1.4196	-0.655	0.513
Patient characteristics				
Depression (GDS)	-0.1904	-0.4304	-2.338	0.021
Physical HRQOL (PCS)	0.3593	0.4976	4.348	0.001
Full model		R^2: 0.1405 F value: 7.244 p: 0.002		

Table 31: Multiple regression analysis: Number of nights in health care institutions during 12-week follow-up (n=158)

Parameters	(β) Standardised coefficient estimate	Unstandardised estimate	Test for null hypothesis	p
Intercept	0.0000	-3.9588	-4.304	0.001
CGA	0.1025	0.4767	1.329	0.186
Process characteristics				
Intensity	0.2487	0.0642	3.080	0.003
Structure characteristics				
Staff mix	-0.3888	-14.8072	-4.927	0.001
Full model		R^2: 0.2048		
		F value: 8.629		
		p: 0.0001		

Table 32: Multiple regression analysis: Number of visits to doctors outside HC during 12-week follow-up (n=158)

Parameters	(β) Standardised coefficient estimate	Unstandardised estimate	Test for null hypothesis	p
Intercept	0.0000	4.2617	4.510	0.001
CGA	-0.1561	-0.7074	-1.881	0.072
Patient characteristics				
Depression (GDS)	0.1973	0.2006	2.154	0.033
Full model		R^2: 0.1885		
F value: 4.276				
p: 0.0134				

3.4 SUMMARY OF FINDINGS

Results from baseline comparability analyses showed that there were no significant differences between the two CGA groups in terms of age, sex, depression, frailty or severity of illness. The long-form CGA group (SMAF) reported significantly better physical HRQOL at baseline compared to the short-form CGA group (SF).

Then, results from analyses of group differences controlling for baseline differences showed that in terms of change in HRQOL over time measured using the SF-36 dimensions and component summary scores, there were no better benefits associated with the use of a long or short CGA. Results also revealed no reduction in service use associated with the use of a longer and more comprehensive CGA procedure. Costs attributed to the use of a long form CGA are nevertheless twice as high as those attributed to a short form CGA.

Finally, regression analyses showed that exposure to either a long or a short form CGA was indifferently associated with improvement in HRQOL. These results are discussed in the next chapter.

4. CHAPTER FOUR: DISCUSSION

4. CHAPTER FOUR: DISCUSSION

This chapter comprises four sections. The first section summarises results of the study and discusses them in the light of the underlying conceptual framework and previous research. In the second section, study limitations are discussed in terms of biases, which may have affected internal or external validity. The third section outlines the implications of findings for home care policy and practice. Finally, conclusions and suggestions for future research are presented.

4.1 DISCUSSION OF RESULTS

Results from this study showed no differences between the two CGAs with regard to improvement in physical or mental health-related quality of life or to use of medical or hospital services. In fact, none of the comparisons or associations, whether from uni- or multivariate type of analyses, resulted in probability values at the level of significance adopted in this study. On the basis of these results (in terms of similar change in health-related quality of life from baseline to 12-week follow-up and similar use of services), the null hypothesis ($H_0 = H_1$) - that benefits would be similar in both CGA groups - cannot be rejected. Therefore, although the literature has demonstrated that the introduction of comprehensive and personalised needs assessment procedures is more beneficial to individual patients, results of this study revealed that there

is no added benefits from the use of shorter or longer forms of comprehensive assessments.

When the study results are examined in the light of the conceptual definitions of needs brought by Bradshaw (1972), it can be argued that the original work on CGAs was based on the concept of normative needs because previous research provided evidence that their introduction enhanced client-specific or norm-based level of functioning. This was observed in different settings for a variety of outcomes of importance for elderly patients including mortality (Boult et al., 1994; Epstein et al., Miller et al., 1994; Pathy et al., 1992; Rubenstein et al., 1989, 1991b; Stuck et al., 1993; Thomas et al., 1993), physical functioning (Applegate et al., 1990; Fabacher et al., 1994; Karrpi et al., 1995; Stuck et al., 1993), psychosocial functioning (Stuck et al., 1993) and service use (Applegate et al., 1990; Boult et al., 1994; Epstein et al., 1990; Fabacher et al., 1994; Germain et al., 1995; Karrpi et al., 1995; Lederset et al., 1994; Miller et al., 1994; Pathy et al., 1992; Stuck et al., 1993; Thomas et al., 1993).

However, as patients from both groups similarly improved in health related quality of life and used similar amounts of services during follow-up, findings from this study suggest that the proliferation of shorter or longer forms seems to be due to a desire to standardise instruments across settings rather than to enhance outcomes. Considering that the two criteria against which instruments are usually chosen (Lamping, 1997), study results favour the argument that the choice of shorter CGAs is being made on the basis of practical usefulness and

on the fact that it has been judged to be appropriate for the population being evaluated, simple to administer and feasible for routine use. The proliferation of CGA forms can therefore be viewed as based on a comparative rather than a normative concept of needs.

Furthermore, given that the budgets, staff mix and care received by both groups during the 12-week follow-up were all statistically comparable, it strongly questions whether in Quebec, shorter or longer forms of needs assessment have been designed in an attempt to deal with fairly standardised resources and service provision patterns regardless of CGAs. This would support the argument that although both CGA procedures were devised to assess patients at entry to home care in order to deliver more efficient care, they were primarily developed for organisational purposes (Équipe de recherche, 1993).

Although this is the first study to show that neither a more or a less comprehensive CGA is likely to add benefits in terms of health-related quality of life and service use for home care patients, results from a study published after completion of the field work for this study in a geriatric inpatient unit in Los Angeles (Siu et al., 1996) also arrived at a similar conclusion. Siu et al. compared the effect of a short versus long form CGA used at discharge from hospitals on health-related quality of life (using the SF-36) and service use. In contrast to this study, however, the Siu et al. (1996) study was based on the hypothesis that a short CGA would be associated with greater improvements in health-related quality of life and lower hospitalisation or placement rates. Their

short form was performed at hospital discharge mainly using clinical data and the long form was performed at home mainly relying on patient report.

Although not identical in design, there are similarities between this study and the Siu et al. study. The Siu et al. short form CGA included physical functioning (ADLs and IADLs), cognitive impairment, social functioning, social support and severity of illness. The inclusion criteria in the Siu et al. study were also similar to those in this study: participants had to be over 65 years of age without any terminal illness. Unlike this study, however, patients with cognitive impairment were included in the Siu et al. study, which necessitated the use of surrogates to complete the SF-36. Their results therefore apply for both patients and surrogates.

After adjusting for baseline characteristics, they found no differences in health-related quality of life or service use between the two groups at 1- and 2-month follow-ups. The authors reported health-related quality of life results for the eight SF-36 dimensions scores but not for the physical or mental component summary scores since they were not calculated.[1] Their results also showed that at a 2-month follow-up, hospital readmission rates and nursing home placements did not differ between groups.

---

[1] Dr Albert Siu, personal communication, July 1997

Therefore, findings from this study, conducted in a home care setting, support findings previously published by Siu et al. (1996) in an inpatient setting. Both studies showed no additional benefit to health-related quality of life assessed using the same instrument or to service use using similar items.

It has to be pointed out that patients reported their health-related quality of life to be low both at baseline and at 12-week follow-up. Although low scores on the SF-36 were expected, it was nevertheless shown that regardless of CGA, the health-related quality of life of patients statistically improved from baseline to follow-up. However, no differential benefits were observable between CGA groups. Beyond statistical evidence, a clinical interpretation of change was also performed. It showed that although the short form group of patients reported better improvement than the long form patients did in five individual dimensions of the SF-36, as concerns the clinical interpretation of change, it nevertheless permitted to conclude that overall improvement measured by the physical and mental summary scores on the SF-36 was similar in both groups. This additional interpretation of change in health-related quality of life is strengthening the interpretation of results towards a lack of differential benefit. However, none of the other CGA studies reviewed have discussed change in patients' conditions using a clinical perspective.

Also, in contrast to most of the other studies reviewed, this study was specifically designed to examine confounding or associations with a variety of patients, process or structure characteristics. Few of the known CGA studies

have used multivariate analyses to examine associations between such confounding characteristics and outcomes. When they did, it was on the sole basis of settings (Rubenstein et al., 1989, 1991; Stuck et al., 1993).

One of the interesting findings from this study revealed that for all participants, regardless of CGA, the presence of depression is significantly associated with (i) less improvement in terms of physical or mental health-related quality of life and (ii) more visits to doctors. Depression, therefore, associates with three of the four outcomes targeted by the objectives of this study. None of the CGA studies reviewed have used multivariate or correlational analyses to examine associations between depression and outcomes. However, as previously discussed, this study findings are nevertheless consistent with a larger body of gerontological research that has shown depression to be a predictor of aspects of health-related quality of life (Anderson, 1995; Bruce, Seeman, Merrill & Blazer, 1994; Diamond, Holroyd, Macciocchi & Felsenthal, 1995; Cress et al., 1995; Hayslip, Galt, Lopez & Nation, 1994). Unfortunately, however, none of the CGAs used in this study are actually designed to assess depression in the elderly as a specific dimension. Once again, this indicates that the underlying concept on which the CGAs used in Quebec were based is comparative rather than normative needs; because if previous findings on the association between depressive state and outcome improvement in elderly patients had been taken into consideration in CGA design, undoubtedly, measures of depression would have been included.

Also, multivariate analyses revealed other factors related to the process or structural characteristics of the care setting that were predictive of service use during the 12-week follow-up. The intensity and staff mix of home care were associated with fewer hospitalisations. Specifically, patients who received less intensive home care packages and who were in home care programmes with a higher proportion of nurses were less likely to be admitted to hospital. Not surprisingly, findings therefore suggest that home care may not be a panacea for elderly patients who need a high level of care. None of the other CGA studies reviewed have investigated such associations. However, these results support findings of a UK study which showed that elderly home care patients including those with intensive support at home, have high use of inpatient services (Black et al., 1996). This suggests that there may be a cut-off point beyond which home care packages may not be suitable for very old or frail patients who need intensive clinical and psychosocial support. The existence of such a threshold has been discussed previously in geriatric literature (Kane & Kane, 1987), policy papers (Feussner, 1991), CGA-related studies (Rubenstein et al., 1989) and Quebec home care system evaluation reports (Equipe de recherche, 1993).

As specifically concerns the fact that staff mix was found to be associated with lower hospitalisation and placement rates, these findings have to be interpreted with caution because they only rely on a proportional measure of staff mix. Although they indicate that nurses undoubtedly play a role in improving outcomes, it could be argued that the impact of staff mix on service use may not only be due to the overall proportion of nurses, but also to their accountability or

the role they play in home care but these aspects were not investigated in the present study. These findings are also difficult to discuss as none of the CGA studies reviewed have investigated the presence of such an association.

Also, it was observed that elderly patients used medical services outside those received from the home care doctors. A question that remains unanswered is why elderly patients would seek additional medical care beyond that provided by home care programmes. Although this question was not explored, use of additional medical care may be due to the fact that (i) home care programmes in Quebec are known to be chronically understaffed regarding medical care; (ii) the vast majority of home-care associated medical clinics in day care centres have limited opening hours; and (iii) elderly patients who are not obliged by the payment system to see a specific physician might have a preference for another physician who is not associated with the home care programmes.

4.2 STUDY LIMITATIONS

In this section, possible biases and sources of errors that may limit internal or external validity and the interpretation of study results are considered.

4.2.1 PRECISION

Problems involving precision deal with statistical inferences and are mainly related to sample size and to the statistical characteristics of the outcome estimators.

The sample size, determined using a 90% level of power of significance and a 0.05 level of significance as suggested by Cohen (1988), Kirkwood (1988), and Kraemer and Thiemann (1987), was estimated using standard deviation values that had been previously reported for the SF-36 physical and mental component summary scores. These had been specifically chosen from SF-36 scores for patients suffering from either chronic obstructive pulmonary disease or hypertension from the Medical Outcomes Study (MOS; Ware et al., 1993, 1994).

However, it was observed that the SF-36 scores in this study had slightly larger standard deviations than those used to calculate the sample size. The overall effect of the actual standard deviations and sample size was, therefore, to reduce the statistical power of the study to an 87% chance of detecting real differences in these outcomes between the study groups. The larger than expected standard deviations resulted in a confidence interval wider than 95%, thereby reducing the ability to detect small differences between groups. However, it must be noted that this does not invalidate the findings, as no specific trend in favour of differences between groups was observable.

Also, concerning precision, it has to be pointed out that the percentages of missing data were evaluated to be low for all variables, ranging from less than 2% in 12 variables to less than 4% (3.33%) in four others.

4.2.2 INTERNAL VALIDITY

Internal validity concerns the accuracy of measurement (Abramson, 1990). Threats to internal validity have been grouped into three main categories: selection, information and confounding biases (Bernard & Lapointe, 1995). However, other threats to internal validity will also be discussed.

4.2.2.1 SELECTION BIAS

Selection bias may result from shortcomings in the way subjects are sampled. Subjects who participate in a study might differ from those who were not selected or who were lost during follow-up and there may also be systematic differences between study groups (Abramson, 1990).

The major weakness of a comparative study of this type is the lack of random sampling. This can result in selecting patients who could systematically differ from each other on certain known or unknown variables or who could systematically differ from the patients in the population from which they were drawn. It has been argued that non probability sampling can be representative if the sample represents a good percentage (≥5% to 10%) of the population under

investigation (Abramson, 1990) and if "the participants under investigation are shown to be fairly homogeneous, the risks of bias may be minimal" (Polit & Hungler, 1995: p.233). According to Kirkwood (1988), a convenience sample could be judged adequate if there are no underlying differences between patients from the different groups comprised in a study. Therefore, the representativeness of this sample can be discussed with regards to quota and to convenience sampling. As concerns the quota of patients included in this study, it reaches Abramson's (1990) recommendation since the SF group involved more than a quarter (28.2%) and the SMAF group involved more than a tenth (11.3%) of the patients from the two home care populations (during the period of the study) from which they were drawn. As concerns convenience sampling, baseline comparisons have shown that patients from both groups were similar at baseline in terms of age, sex, living alone, depression, severity of illness, and all but one dimension of the SF-36 (vitality). They were admitted to home care programmes of comparable staff mix and budget. Furthermore, no disease-specific pattern related to one group was revealed when diagnosis and comorbidity were examined using the Cumulative Illness Severity Scale. Finally, the study period had been planned to be identical for both groups so that seasonal variation caused by climate in the province of Quebec would not be a factor. It is therefore unlikely that a systematic pattern of difference related to the order of individuals entering the study occurred. Consequently, although not selected at random, the convenience sampling strategy used in this study may be seen as adequate.

It should also be emphasised that the final results from this study are based on data only from patients who answered both baseline and 12-week follow-up questionnaires. The number of patients lost to follow-up was low (12.7%) and equally distributed between the two CGA groups. It was also lower or fairly comparable to that in other CGA studies (Applegate et al., 1989; 11% Karrpi & Tilvis, 1993; 19%; Pathy et al., 15.2%).

In conclusion, although study participants were not chosen using a probability sampling strategy, the use of a quota greater than 10% as well as a convenience sampling strategy which gave every person an equal chance of being selected reduced bias. Also, as baseline comparability analyses showed that patients from both CGA groups were fairly similar at entry to home care, and as the loss of subjects during follow-up was quite low (<15%) and similar between groups, it seems unlikely that the estimate of effect at follow-up was biased in favour of one of the two groups.

4.2.2.2 INFORMATION BIAS

Information bias can occur as a result of errors in the collection, recording or classification of data (Abramson, 1990).

Baseline SF-36 scores for subjects in this study were lower than scores reported in previous research. Although this might be due to the cumulative effect of age and severity of illness (Brazier et al., 1996; Lyons et al., 1994;

Ware et al., 1993, 1994), three other potential sources of information (response) bias may have contributed to the reporting of lower than expected health-related quality of life scores. First, the timing of the interview might have created a systematic 'faking bad' response bias, leading elderly patients to report lower health-related quality of life scores at baseline and at follow-up. At baseline, the large majority of participants completed the study questionnaire comprising the SF-36 within one or two days of the home care admission interview. Although they were told that information obtained from the questionnaire would not be taken into account in determining the care package, this information may have been ignored. Patients may have intentionally declared lower health-related quality of life fearing that, by reporting higher levels of health-related quality of life, they would be allocated less home care services. If this occurred, the net result would be a systematic underestimation of baseline health-related quality of life in both groups. Similarly, as the 12-week follow-up interview was conducted around the time of a statutory quarterly re-evaluation of care by home care staff, a similar response bias may have occurred amongst patients had they believed that information from the research questionnaire at follow-up would be used to recommend subsequent care packages. Although participants were told that the questionnaire was independent of the statutory re-evaluation of the home care programme, if a response bias occurred, the net result would be a systematic underestimation of health-related quality of life at follow-up for both groups. Therefore, given that it is unlikely that an effect of this type would have been predominant in one group over the other, this would not have biased the study results directionally. So, even with the possibility of a baseline bias in reporting

lower health-related quality of life for a limited set of patients, leading to an overestimation of improvement in the long CGA group, results for this group indicate that they did not benefit more than the short form group. Therefore, this possible bias does not invalidate the conclusions drawn from this study.

Another potential source of information bias in this study is due to the burden of completing the additional health-related quality of life and depression questionnaires after having completed the CGA at entry to home care (which lasts as long as three hours for the long form SMAF). Except for the first 15 patients admitted in each group, the study design tried to overcome this problem by carrying out baseline interviews not immediately after, but within two days of the home care admission interview, thus giving patients a short break between the home care admission CGA interview and completion of other study questionnaires. The cumulative effect of requesting large amounts of information in a short period of time from frail elderly patients which might have resulted in an under-reporting of health-related quality of life due to frustration, boredom or fatigue was therefore overcome for the majority of patients. However, if this under-reporting occurred in the few patients who were interviewed immediately following the admission procedure, it was likely to have been more prominent in the group exposed to the long form of CGA, who had to spend twice as long completing the home care admission process. This differential reporting would have introduced bias into the analyses involving health-related quality of life. However, the directionality of this bias would have been to overestimate improvements for the long form group. Consequently, as results show no trends

in that direction, it is likely that the potential effects of this bias do not serve as an explanation for the observed study results.

The last potential source of information bias is the fact that one third of the nurses who conducted the interviews were also involved in delivering care. This alternative was chosen due to limited resources. However, this may have created a social desirability response bias which may have led patients to "attribute to themselves statements with socially desirable values and to reject those with undesirable ones" (Wiggins, 1973; p.420) in order to please the nurses. However, given that a similar percentage of home care nurses were involved as interviewers in both groups, it is unlikely that this response bias was more prominent in one group than in the other.

4.2.2.3 CONFOUNDING BIAS

Confounding factors are extraneous factors which may "obscure the relationship between the dependent and independent variables" (Abramson, 1990: p.94). Confounding occurs when a variable is associated with both exposure and outcome. Unlike other types of bias, known confounding can be controlled during the data analysis stage.

In this study, correlational and multivariate analyses were used to examine associations between exposure and co-explanatory variables. When modelling the exposure variable, all co-explanatory variables were fitted one at a

time. Conclusions about the association between exposure and outcomes have taken into account the effect of known confounding factors through the use of multiple regression analyses. It is therefore unlikely that known confounding biased the estimate of effect.

However, unmeasured or unknown confounding variables may account for part of any observed association. In observational studies, known confounding and random error are, sometimes, only a fraction of the total error and are rarely, if ever, the only important source of uncertainty. Potential biases may, therefore, be due to unmeasured confounding factors (Greenland, 1996). It may be, for example, that if home care nurses who administered the short CGA in this study were better trained in geriatric home care than nurses in the long CGA, this could have led patients in the short CGA group to report better outcomes. It could have also been that the patients in the long CGA group were more optimistic about ageing than those in the short form CGA group, leading them to report better outcomes due to the simple passage of time or maturation. It might also be that the patients in the long CGA group were, for unknown reasons, less sensitive to the care package they received than were the patients in the short form group who are from more homogeneous backgrounds. These unknown confounders might have altered relationships between CGA and outcomes.

PAGE
MISSING IN
ORIGINAL

Finally, matters of internal validity in impact assessments also include the issue of whether the intervention being tested was indeed actually implemented as intended (*exposure suspicion bias*). It raises the question of whether CGA procedures that seem different in theory might not be so different after all when really applied in the field. For example, in some cases, it may have been possible that admitting nurses applied only parts of the long form procedure as a means of 'saving time', thereby reducing the differences in the overall comprehensiveness between the long and the short forms. In order to address this issue, all CGAs were reviewed for completeness and time for completion and it was confirmed that both CGAs were thoroughly implemented.

Also, participants in this study were recruited from two different home care programmes based at different sites (situated at least 200 kilometres apart from each other). A design such as this eliminates the possibility of contamination between the two CGA groups as neither patients nor staff could be exposed, influenced, or assessed by parts of another procedure.

4.2.3 EXTERNAL VALIDITY

External validity refers to the degree to which the findings can be generalised from the sample to the population or to other samples in other settings. Generalisability addresses the question: "To what population, environments and conditions can the results of the study be applied?" (Polit &

Hungler, 1995: p.221). Generalisability is influenced by a number of factors related to the representativeness of the sample.

One limitation is the fact that a higher percentage of patients who refused to participate in this study were living alone. Therefore, the sample was biased in favour of family-supported patients. This higher refusal rate in elderly patients living alone suggests that the results of this study might be of relevance to a limited group of elderly patients.

Also, in this study, all patients referred for home care who were cognitively impaired or in terminal care were excluded. The decision to exclude cognitively impaired patients was made for internal validity considerations and specifically in order to use patient reports. Unlike many other CGA studies, this study did not use surrogates to report on behalf of patients with cognitive impairments. However, although this restriction enhances internal validity, it limits the generalisability of findings to elderly patients without cognitive impairment and without terminal illness. It is important to point out that more than 40% of elderly patients who were admitted to home care during the study period were cognitively impaired and were, therefore, excluded from the study. Further research targeted at cognitively impaired patients and their caregivers is therefore needed in order to determine whether present findings can be generalised to all home care patients.

Another threat to external validity concerns the fact that almost 40% of elderly patients declined to participate in the study. Although refusal rates in face-to-face interviews have been found to increase systematically with age (Herzog & Rogers, 1988), a recent study carried out in a similar population in Quebec using face-to-face interviews with nurse interviewers found a 13% refusal rate (Hébert, Bravo, Korner-Bitensaki & Voyer, 1996). Other large studies using face-to-face interviews with community-dwelling elderly patients have also reported lower refusal rates (12%: Manton, 1988; 14%: Cornoni-Huntley et al., 1985; 9%: Fitti & Kovar, 1984; 15%: Leinbach, 1982). There are two possible situational explanations for the higher refusal rate in this study. First, when elderly patients were asked their reasons for refusal, many responded that they felt too ill or too tired to answer further questionnaires. Second, nurse interviewers and programme managers indicated that they were not surprised by the high refusal rate given the fact that major health care reforms implemented during the study period were disincentives for elderly patients to participate.

Finally, this study applies to a specific population of elderly patients admitted to home care in Quebec, Canada. The study was carried out in a particular health care system (state-based payment system, regional governance) and was limited to specific groups of patients (mainly French-Canadian-speaking in two of 16 regional health authorities). These results may not be generalisable to elderly home care patients from other language groups or from other regions or countries. However, as discussed previously, results from this study are consistent with those recently reported by Siu et al. (1996) in

a different country (USA) and setting (inpatient setting). Although further research in different settings is needed to extend the generalisability of findings from this study, the results support a growing body of literature in favour of shorter CGAs.

4.3 IMPLICATIONS FOR HOME CARE POLICY AND PRACTICE

The use and implementation of research findings can be characterised on a continuum, with direct utilisation of findings (*instrumental utilization* Leviton & Hugues, 1979, 1981) at one end and more diffuse utilisation at the other end (*conceptual utilization* Polit & Hungler, 1995). There is a potential for utilisation of the findings from the study at all points along this continuum.

However, the value of practice-based research in a study of this type is often judged by its potential for instrumental utilisation. For home care staff, administrators and decision-makers, knowledge about the differential impact of long or short CGAs is of great potential use since it relates directly to aspects of efficiency such as the relation between work burden, benefits and costs. Specifically, findings from this study revealed that there are no significantly greater benefits associated with the use of a longer form CGA, which involves a higher burden on home care admitting nurses and higher costs, compared to a less time-consuming short form CGA. A shorter form could therefore be recommended for all assessments if further research with cognitively impaired patients (who represent more than 40% of home care admissions) show similar

findings. Current efforts to control the costs of home care services will be bolstered by such findings, which add information about the costs of CGA procedures in relation to potential benefits. Although findings from this study may not lead to the immediate adoption of shorter CGA procedures, they provide evidence that less resource intensive methods of delivering services may be as efficient as others.

Also, while findings revealed that depression was amongst the strongest predictors of improvement in quality of life and visits to doctors outside home care programmes, it is important to note that neither of the CGAs used in this study investigate depression as a specific dimension. As previously reported, it is consistent with other findings from primary or acute care settings (Burrows et al., 1995; Davidson et al., 1994) which showed that depression was not often investigated and therefore undetected but highly related to age and functioning. Findings from this study suggest that assessment of depression using valid and standardised instruments (such as the GDS; Yesavage, 1973) should be included in all CGAs.

Study results revealed associations between CGA outcomes and structural characteristics. As these results were not the main focus of the study, they nevertheless indicate that the relationship between CGA and staffing models in home care needs to be re-examined.

Then, conceptual utilisation refers to the variety of ways in which findings could have more distal impacts on policy and practice. These impacts relate to the use of findings to influence the general thinking of stakeholders about the relative advantages and disadvantages of longer or shorter CGAs. This is of particular interest as home care professionals are often confronted with the use of assessment tools that they consider to be too long in terms of burden on elderly patients. Therefore, home care professionals could use these results in order to discuss the relevance of using long procedures. More importantly, in the light of findings, home care professionals could discuss whether they consider that the needs uncovered by CGAs are really those determined by gaps between an actual state and a standard of functioning and by the scientific evidence on what is the most efficient health care currently available (normative needs) or if they are those established in order to compare individuals from different areas or settings (comparative needs). The question of normative vs. comparative needs could be discussed in more depths in Quebec as there are still significant disparities in health and well-being between regions and between age-specific or socio-economic groups (Gouvernement du Québec, 1992b). While the concept of normative needs could be used as the frame for the development of needs assessment procedures, the concept of comparative needs should not be abandoned as it may simultaneously provide a method for addressing inequality in health while promoting equity in the provision and use of health services.

4.4 CONCLUSIONS AND FUTURE RESEARCH

This study focused on problems that have arisen from a lack of a shared vision of needs amongst regional health authorities and home care providers concerning standardised admission procedures. As previously discussed, it is those normative needs that are regarded as the most appropriate to investigate in needs assessment at group or individual levels, because normative needs are limited to those from which patients can, because of the presence of evidence-based interventions, benefit.

One of the fundamental issues concerning the use of either more or less comprehensive admission procedures in home care is therefore to determine whether they are associated with better outcomes such as better physical and mental health-related quality of life in elderly persons and fewer unplanned hospitalisations and medical consultations outside home care. The primary objective of this study was to assess these patient-based benefits. However, no differential benefits from the use of a longer form CGA was shown. Instead, regardless of CGAs, it was shown that the packages of care received by the elderly home care were similar and that patients, process or structural aspects of care were associated to outcomes.

This study has therefore achieved four goals. First, it is the first study to examine the comparative benefits of a short versus a long CGA in home care in Canada while simultaneously controlling for patients, process and structural

characteristics. As such, it adds to current scientific knowledge about CGAs, particularly in terms of the lack of value associated with a more comprehensive one. Second, it has contributed to the analysis of practice-based interventions that have direct implications on the burden of work for nurses and on issues of costs. Third, it showed that one important dimension of health in the elderly: depression, is not investigated in CGAs although it is associated with improvement in health-related quality of life and with the use of medical care elderly patients make outside home care. Finally, it raised the question of whether a concept of normative needs should be used in solo as the frame for future development of needs assessment procedures in home care because it is likely that the concept of comparative needs may simultaneously provide a method for addressing inequality in health while promoting equity in the provision and use of health services.

However, recommendations for home care programmes and for future research can be made. For home care programmes, as previously discussed, the use of valid and reliable instruments to evaluate depression in the elderly at their entry to home care should be encouraged. Also, medical care from home care doctors should be made more available to home care patients. Accounting for the fact that home care programmes are actually medically understaffed, home care co-ordinators should try to enhance continuity of care with private consulting physicians of their territory. Then, CGAs should be used in the monitoring of patients' condition in order to plan hospitalisation and placement according to the intensity of care received. Home care professionals can use the

results of this study to discuss the burden of admission interviews for their patients and themselves.

Also, as concerns research, the examination of benefits of CGAs for cognitively impaired patients and their caregivers and for other samples of patients from different regions should be encouraged in order to have a broader view of the generalisability of findings from this study. Research to compare the effectiveness of CGAs using multiple assessment points over a longer period of time is then needed in order to examine if long-term benefits of more or less comprehensive CGA procedures are observable. At the same time, the evaluation of the direct impact of different care plans on health-related quality of life and service use should be encouraged in order to determine the partial effect of the process of care. Research specifically aimed at measuring the impact of different staffing levels and the levels of nurses' accountability of patient-based outcomes in CGA home care patients should also be encouraged. Research is needed to compare the cost-effectiveness of different CGAs. In these, more emphasis should be placed on the costing components of CGAs not only in terms of administration time, but also in terms of burden for patients and caregivers and other administrative costs.

Finally, CGA is undoubtedly passing from an 'experiment' to being a standard of care for older people in home care. As CGAs in home care and other settings proliferate in number and broaden in scope, the emphasis for health services research and policy regarding CGA is currently becoming an issue of

assessing efficiency. Although the development of increasingly sophisticated approaches to needs assessment has intensified, current concerns about the rising costs of longer procedures is unlikely to wane. More research on the comparative effect of CGAs should therefore be performed on a continuing basis.

5. REFERENCES

Aaronson N.K., Acquadro C., Alonso J., Apolone G., Bucquet D., Bullinger M., Bungay K., Fukuhara S., Gandek B., Keller S., Razavi D., Sanson-Fisher R., Sullivan M., Wood-Dauphinee S., Wagner A., & Ware J.E., Jr. (1992). Special communication: International quality of life assessment *(IQOLA). Quality of Life Research*; 1: 349-351.

Abeles R.P., Gift H.C. & Ory M.G. Eds. (1994) *Aging and quality of life*. New York: Springer Publishing Company.

Abramson J.H. (1990) *Survey methods in community medicine: epidemiological studies, programme evaluation, clinical trials*. Edinburgh: Churchill Livingston.

American Geriatrics Society Public Policy Committee (1989) Comprehensive geriatric assessment: the American Geriatrics Society position statement. *Journal of the American Geriatrics Society*; 37: 473-474.

Anderson K.L. (1995) The effect of chronic obstructive pulmonary disease on quality of life. *Research in Nursing and Health*; 18(6): 547-556.

Anderson C., Laubscher S. & Burns R. (1996) Validation of the Short Form 36 (SF-36) health survey questionnaire among stroke patients. *Stroke* ; 27(10):1812-1816.

Applegate W.B., Deyo R., Kramer A., & Meehan S. (1991) Geriatric evaluation and management: current status and future research directions. *Journal of the American Geriatrics Society*; 39(Suppl), 2S-7S.

Applegate W.B., Millet S.T. & Graney M.J. (1990) A randomized controlled trial of a geriatric assessment unit in a community rehabilitation hospital. *New England Journal of Medicine*; 322: 1522-1524.

Asberg K.H. (1987) Disability as a predictor of outcome for the elderly in a department of internal medicine. A comparison of predictions based on Index of ADL and physician predictions. *Scandinavian Journal of Social Medicine*; 15: 261-265.

Bastos P.G., Gomes A., Oliveira P. & da Silva A.T. (1993) Glasgow Coma Scale score in the evaluation of outcome in the intensive care unit: findings from the Acute Physiology and Chronic Health Evaluation III study. Critical Care Medicine; 21(10):1459-1465.

Bernabei R., Murphy K., Frijters D., DuPaquier J.N. & Gardent H. (1997) Variation in training programmes for Resident Assessment Instrument implementation. *Age Ageing*; 26 (Suppl 2) :31-35.

Bernard P.M. & Lapointe C. (1995) *Mesures statistiques en épidémiologie*. Québec: Presses de l'Université du Québec. 314 p.

Berg L., Hughes C.P. & Coben L.A. (1982) Mild senile dementia of the Alzheimer type: research diagnostic criteria, recruitment and description of a study population. *Journal of Neurologic and Neurosurgical Psychiatry* ; 45: 962-968.

Bergner M., Bobbitt R.A., Carter W.B. & Gilson B.S. (1981) The Sickness Impact Profile: Development and finale revision of a health status measure. *Medical Care*; 19: 787-805

Black N. (1996) Why we need observational studies to evaluate the effectiveness of health care. *British Medical Journal*; 312(7040): 1215-1218.

Borok G.M., Reuben D.B., Zendle L.J., Ershoff D.H., Wolde-Tsadik G., Rubenstein L.Z., Ambrosini V.L., Fishman L.K. & Beck J.C. (1994) Rationale and design of a multi-center randomized trial of comprehensive geriatric assessment consultation for hospitalized patients in an HMO. *Journal of the American Geriatrics Society*; 42(5): 536-44.

Boult C., Boult L., Murphy C., Ebbitt B., Luptak M. & Kaplan R.L. (1994) A controlled trial of outpatient geriatric evaluation and management. *Journal of the American Geriatrics Society*; 42: 465-470.

Bourque P., Blanchard L. & Vézina J. (1990) Étude psychométrique de l'Échelle de Dépression Gériatrique. *Revue canadienne du vieillissement*; 9: 348-355.

Bourque P., Beaudette D. (1982) Étude psychométrique du questionnaire de dépression de Beck auprès d'un échantillon d'étudiants universitaires francophones. *Revue Canadienne des Sciences du Comportement* ; 14: 211-218.

Bowling A. (1991) *Measuring health : a review of quality of life measurement scales*. Buckingham : Open University Press; p.36.

Bowling A. (1995) *Measuring Disease : a review of disease-specific quality of life measurement scales*. Buckingham : Open University Press; p.210.

Bradshaw J. (1972) A taxonomy of social needs in *Problems and progress in medical care*. Seventh Series NPHT/DVP p.71-82.

Branch L.G. & Meyers A.R. (1987) Assessing physical function in the elderly. *Clinics in Geriatric Medicine*; 3(1): 29-51.

Brazier E., Walters S.J., Nicholl J.P. & Kohler B. (1996) Using the SF-36 and Euroqol on an elderly population. *Quality of Life Research*; 5: 195-204.

Brook R.H., Ware J.E. & Rogers W.H. (1984) *The effect of co-insurance on the health of adults : results from the Rand Health Insurance Experiment.* Santa Monica, CA : The RAND Corporation; R-3055-HHS.

Brorsson B. & Asberg K.H. (1984) Katz Index of Independence in ADL: reliability and validity in short term care. *Scandinavian Journal of Rehabilitative Medicine*; 16: 125-132.

Browne G., Roberts J., Gafni A., Weir R. & Byrne C. (1995) More effective and less expensive community approaches to care of chronically ill: lessons from nine studies. *Health Policy*; 34 : 95-112.

Browne G., Roberts J., Weir R., Gafni A., Watt S. & Byrn C. (1996) The cost of poor adjustment to chronic illness: lessons from three studies. *Health and Social Care*; 2: 85-93.

Browne G., Arpin K., Corey P., Fitch M. & Gafni A. (1990) Individual correlates of health service utilization and the cost of poor adjustment to chronic illness. *Medical Care*; 28(1): 43-58.

Bruce M.L., Seeman T.E., Merrill S.S. & Blazer D.G. (1994) The impact of depressive symptomatology on physical disability: MacArthur Studies of Successful Aging. *American Journal of Public Health*; 84(11): 1796-1799.

Burns R. (1994) Beyond the black box of comprehensive geriatric assessment. *Journal of the American Geriatrics Society*; 42(10): 1130-1131.

Burrows A.B., Satlin A., Salzman C., Nobel K. & Lipsitz L.A. (1995) Depression in long-term care facility: clinical features and discordance between nursing

assessment and patient interviews. *Journal of the American Geriatrics Society*; 43: 1118-1122.

Center for the Study of Aging and Human Development (1978) *Multidimensional Functional Assessment : the OARS methodology. A manual.* (2nd Edition.) Durham NC: Duke University.

Challis D., Darton R., Johnson L., Stone M. & Traske K (1991) An evaluation of an alternative to long-stay hospital care for frail elderly patients: II. Costs and effectiveness. *Age and Ageing* ; 20(4):245-254.

Chambers L.W. (1982) *The McMaster Health Index Questionnaire: methodologic documentation and report of the second generation of investigations.* Department of clinical epidemiology and biostatistics. McMaster University, Hamilton, Ontario.

Chambers L.W. (1988) The McMaster Health Index Questionnaire: an update. In Walker S.R. & Rosser R.M. *Quality of Life: assessment and application.* Lancaster: MTP; 113-131.

Cohen J. (1988) *Statistical power analysis for the behavioral sciences.* (2nd Ed.) Hillsdale, N.J.: L. Erlbaum Associates.

Cornoni-Huntley J.C., Foley D.J., White L.R., Suzman R., Berkman L.F., Evans D. & Walace R.B. (1985) Epidemiology of disability in the oldest old: methodological issues and preliminary findings. *Milbank Quarterly - Health Sciences*; 63(2): 350-376.

Cress M.E., Schechtman K.B., Mulrow C.D., Fiatarone M.A.; Gerety M.B. & Buchner D.M. (1995) Relationship between physical performance and

self-perceived physical function. *Journal of the American Geriatrics Society*; 43(2): 93-101.

Culyer A. (1976) *Need and the National Health Service*. London : Martin Robertson.

Day S.R. (1987) Measuring utilization and impact of home care services: a systematic model approach for cost-effectiveness. In Rinke L.T. *Outcome measures in home care. Volume I: Research*. New York: National League for Nursing. Publication No. 21-2194: p. 109-128.

Desrosiers J., Bravo G., Hebert R. & Dubuc N. (1995) Reliability of the revised functional autonomy measurement system (SMAF) for epidemiological research. *Age and Aging*; 24(5): 402-406.

Diamond P.T., Holroyd S., Macciocchi S.N. & Felsenthal G. (1995) Prevalence of depression and outcome on the geriatric rehabilitation unit. *American Journal of Physical Medicine and Rehabilitation*; 74(3): 214-217.

Donabedian A. (1973) *Aspect of medical care administration*. Cambridge, Mass. : Harvard University Press. p.62

Donabedian A. (1974) *The application of epidemiology to the planning and evaluation of health services*. World Health Organisation Report. p.14.

Donabedian A. (1980) *The definition of quality and approaches to its assessment. Explorations in quality assessment and monitoring: Volume I*. Ann Arbor MI: Health Administration Press.

Donabedian A. (1985) *The methods anf findings of quality assessment and monitoring: an illustrated analysis. Explorations in quality assessment and monitoring: Volume III*. Ann Arbor MI: Health Administration Press.

Doyal L. & Gough I. (1991) *A theory of human need.* New York : The Guilford Press; 365 p.

Epstein A.M., Hall J.A., Fretwell M., Feldtein M., DeCiantis M.L., Tognetti J., Cutler C., Constantine M., Besdine R., Rowe J. & McNeil B.J. (1990) Consultative geriatric assessment for ambulatory patients: a randomized trial in a health maintenance organization. *Journal of the American Medical Association*; 263: 538-544.

Équipe de recherche en organisation et évaluation des services de santé. (1993). *Etude portant sur les outils utilisés dans les CLSC pour l'évaluation des demandes d'aide et de soins à domicile.* Québec: URSC-CHUL.

Fabacher D., Josephson K., Pietruszka F., Linderborn K, Morley J.E. & Rubenstein L.Z. (1994) An in-home preventive assessment program for independent older adults: a randomized controlled trial. *Journal of the American Geriatrics Society*; 42(6): 630-638.

Feussner J.R. (1991a) Geriactric evaluation and management units: experimental methods for evaluating efficacy. *Journal of the American Geriatrics Society*; 39 (Supplement), 19S-24S.

Feussner J.R., Wieland D., Kayser-Jones J., Kramer A., Saunders W. & Fretwell M. (1991b) Working group recommandations: methods for geriatric evaluation and management research. *Journal of the American Geriatrics Society*; 39 (Supplement): 45S-47S.

Fillenbaum G.G. & Smyer M.A. (1981) The development, validity and reliability of the OARS: Multidimensional Functional Assessment Questionnaire. *Journal of Gerontology*. 36: 428-434.

Fillenbaum G.G. (1988) *Multidimensional functional assessment of older adults: the Duke Older American Resources and Services procedures.* Hillsdale, New Jersey: Erlbaum Associates Ltd.

Fillenbaum G.G. (1986) *Troisième âge et bien-être: approches d'une évaluation multidimensionnelle.* Genève: OMS.

Fitti J.E. & Kovar M.G. (1987) The Supplement on Aging to the 1984 National Health Interview Survey. *Vital Health Statistics*; 21: 1-115.

Folstein M.F., Folstein S.E. & McHugh P.R. (1975) Mini-Mental State: a practical method for grading the cognitive state of patients for the clinician. *Journal of Psychiatric Resources*; 12: 189-198.

Germain M., Knoeffel F., Wieland D. & Rubenstein L.Z. (1995) A geriatric assessment and intervention team for hospital inpatients awaiting transfer to a geriatric unit: a randomized trial. *Aging Milano*; 7(1): 55-60.

Gouvernement du Québec (1992a) *Le systΠme sociosanitaire québécois en quelques chiffres.* Quϑbec: Direction des communications. Ministère de la santé et des services sociaux.

Gouvernement du Québec (1992b) *The policy on health and well-being.* Quϑbec: Direction des communications. Ministère de la santé et des services sociaux.

Gouvernement du Québec (1991) *Rapport du groupe d'experts sur les personnes ainées. Vers un nouvel équilibre des âges.* Québec: Direction des communications. Ministère de la santé et des services sociaux.

Greenland S. (1996) Basic methods for sensitivity analysis of biases. *International Journal of Epidemioly*; 25(6): 1107-1116.

Gurland B.J., Yorkston N.J., Goldberg K., Fleiss J.L., Sloane R.B. & Cristol A.H. (1972) The Structured and Scaled Interview to Assess Maladjustment (SSIAM): II. Factor analysis, reliability and validity. *Archives in General Psychiatry*; 27: 264-267.

Gurland B.J., Golden R.R., Teresi J.A. & Challop J. (1984) The SHORT-CARE: an efficient instrument for the assessment of depression, dementia and disability. *Journal of Gerontology*; 39: 166-169.

Gurland B.J. (1978) The comprehensive assessment and referral evaluation (CARE): rationale, development and reliability. *International Journal of Aging and Human Development*; 8: 9-42.

Hawes C., Morris J.N., Phillips C.D., Mor V., Fries B.E. & Nonemaker S. (1995) Reliability estimates for the Minimum Data Set for nursing home resident assessment and care screening (MDS). *Gerontologist*; 35(2): 172-178.

Hayslip B.Jr, Galt C.P., Lopez F.G. & Nation P.C. (1994) Irrational beliefs and depressive symptoms among younger and older adults: a cross-sectional comparison. *International Journal on Aging and Human Development*; 38(4): 307-326.

Hébert R., Bravo G., Korner-Bitensaky N. & Voyer L. (1996) Refusal and information bias associated with postal questionnaires and face-to-face interviews in very elderly subjects. *Journal of Clinical Epidemiology*; 49(3): 373-381.

Hébert R., Carrier R. & Bilodeau A. (1988a) Le système de mesure de l'autonomie fonctionnelle. *Revue de gériatrie*; 13(4): 161-167.

Hébert R., Carrier R. & Bilodeau A. (1988b) The functional autonomy measurement system (SMAF): description and validation of an instrument for the measurement of handicaps. *Age and Aging*; 17(5): 293-302.

Hedrick S.C., Barrand, N., Deyo R., Haber, P., James, K., Metter, J., Mor, V., Scanlon, W., Weissert, W., & Williams, M. (1991) Working group recommendations: measuring outcomes of care in geriatric evaluation and management units. *Journal of the American Geriatrics Society*; 39(Supplement): S48-S52.

Helzer J.E. & Robins L.N. (1988) The Diagnostic Interview Schedule: its development, evolution and use. *Social Psychiatry and Psychiatric epidemiology* ; 23: 6-16.

Herzog R. & Rogers W.L. (1988) Old age and response rates to interview sample surveys. *Journal of Gerontology*; 43: S200-S205.

Hughes S.L., Cummings, J., Weaver, F., Manheim, L.M., Conrad, K.J., & Nash, K. (1990) A randomized trial of Veterans Administration home care for severely disabled veterans. *Medical Care*; 28(2): 135-145.

Hughes S.L., Cummings J., Weaver F., Manheim L., Braun B., & Conrad K. (1992) A randomized trial on the cost effectiveness of VA hospital-based home care for the terminally ill. *Health Services Research*; 26(6): 801-817.

Hunt S.M., McEwen J. & McKenna S.P. (1985) Measuring Health Status: a new tool for clinicians and epidemiologists. *Journal of the Royal College of General Practitioner*; 35: 185-188.

Jensen P.S., Irwin R.A., Josephson A.M., Davis H., Xenakis S.N., Bloedau L., Ness R., Mabe A., Lee B., Traylor J & Clawson L. (1996) Data-gathering

tools for "real world" clinical settings: a multisite feasibility study. *Journal of the American Academic Child and Adolescent Psychiatry*; 35(1):55-66.

Kane R.A. & Kane R.L. (1981) *Assessing the elderly.* Toronto: Lexington Books.

Kane R.A. & Kane R.L. (1987) *Long-term care: principles, programs and policies.* New York: Springer Publishing Company.

Karppi P. & Tilvis R. (1995) Two-year follow up of a randomized clinical trial on community-dwelling patients. *Scandinavian Journal of Primary Health Care*; 13(2): 93-98.

Katz J.N., Larson M.G., Phillips C.B., Fossel A.H. & Liang M.H. (1992) Comparative measurement sensitivity of short and longer health status instruments. *Medical Care*; 30(10): 917-925.

Katz S., Downs T.D. & Nash H.R. (1970) Progress in the development of the Index of ADL. *Gerontologist*; Spring Part I: 20-42.

Katz S., Ford A.B., Moscowitz R.W., Jackson B.A. & Jaffee M.W. (1963) Studies of illness in the aged: the index of ADL - a standardized measure of biological and physical function. *Journal of the American Medical Association*; 185: 914-919.

Kind P. (1988) *The design and construction of quality of life measures* (Discussion Paper No.43) New York: University of New York Centre for Health Economics.

Kirkwood B.R. (1988) *Essentials of medical statistics.* Oxford: Blackwell Scientific Publications.

Kleinbaum D.G., Kupper L.L. & Muller K.E. (1988) *Applied regression analysis and other multivariate methods* (2nd Edition). Belont CA: Duxbury Press.

Krach P. & Yang J. (1992) Functional status of older persons with chronic mental illness living in a home setting. *Archives in Psychiatry and Nursing*; 6(2): 90-97.

Kraemer H.C. & Thiemann S. (1987) *How many subjects*. Newbury Park, CA: Sage Publications Inc.

Kramer A.M., Bauman A.K., Crisler K.S., Schlenker R.E. & Shaughnessy P.W. (1989) *Review of quality measurement approaches relevant to home health care. Development of outcome-based quality measures in home health services; Study Paper #2*. Denver: Center for health policy research.

Laberge A., Aubé D., Paradis M., & Joubert P. (1994). *Développement et utilisation d'outils d'évaluation des besoins de service à domicile au Québec: logique de gestion ou logique d'intervention?* Présentation orale lors de la Vème conférence internationale sur la science des systèmes dans le domaine des services socio-sanitaires pour les personnes âgées et handicapées.

Lamping D.L. (1997) Measuring health-related quality of life in venous disease: practical and scientific considerations. *Angiology*; 48(1): 51-57.

Lawton M.P. & Brody E.M. (1969) Assessment of older people: self maintaining and instrumental activities of daily living. *Gerontologist*; 9: 179-186.

Lawton M.P., Moss M., Fulcomer M. & Kieblan M.H. (1982) A research and service oriented multilevel assessment instrument. *Journal of Gerontology*; 37: 91-99.

Lederset B., Lombrail P., Carbon C., & Brodin M. (1994) The impact of comprehensive multi-dimensional geriatric assessment programme on

duration of stay in a French acute medical ward. *Age and Ageing*; 23: 223-227.

Leinbach R.M. (1982) Alternatives to face-to-face interview for collecting gerontological needs assessment data. *Gerontologist*; 22: 78-82.

Leplège A., Mesbah M. & Marquis P. (1995) Analyse préliminaire des propriétés psychométriques de la version francaise d'un questionnaire international de mesure de qualité de vie: le MOS SF-36 (version 1.1). *Revue d'épidemiologie et de santé publique*; 43(4): 371-379.

Leviton L.C. & Hughes E.F.X. (1979) *Utilization of evaluation*. Evanston Illinois: Northwestern University Center for Health Services and Policy Research.

Leviton L.C. & Hughes E.F.X. (1981) Research on the utilization of evaluation: a review and synthesis. *Evaluation Review*; 5(4): 525-548.

Linn B.S., Linn M.W. & Gurel L. (1968) Cumulative illness rating scale. *Journal of the American Geriatrics Society*; 16(5): 622-627.

Liss P.E. (1993) *Health care need : meaning and measurement*. Aldershot : Avebury - Ashgate Publishing Limited ;141 p.

Long A.F., Dixon P., Hall R., Carr-Hill R.A. & Sheldon T. A. (1993) The outcomes agenda: contribution of the UK Clearing House on health outcomes. *Quality in Health Care*; 2: 49-52.

Lyons R.A., Perry H.M. & Littlepage B.N.C. (1994) Evidence for the validity of the Short-Form 36 Questionnaire (SF-36) in an elderly population. *Age and Ageing*; 23: 182-184.

Manton K.G. (1988) A longitudinal study of functional change and mortality in the U.S. *Journal of Gerontology- Social Sciences*; 43: S153-S161.

Mark B.A. (1995) The black box of patient outcomes research. *Image the Journal of Nursing Scholarship*; 27(1): 42.

McDowell I. & Newell C. (1987) *Measuring health : a guide to rating scales and questionnaires*. New York : Oxford University Press; p.54-68.

McGill J.S. & Paul P.B. (1993) Functional status and hope in elderly people with and without cancer. *Oncology Nursing Forum*; 20(8): 1207-1213.

McGivney S.A., Mulvihill M. & Taylor B. (1994) Validating the GDS depression screen in the nursing home. *Journal of the American Geriatrics Society*; 42(5):490-492.

McGuire A., Henderson J. & Mooney G. (1988) *The economics of health care : an introductory text*. London : Routledge

Medical Outcomes Trust (1994) *How to score the SF-36 Health Survey*. Boston: MOS; 31 p.

Miller M.D., Paradis C.F., Houck P.R., Mazumdar S., Stack J.A., Rifai A.H., Mulsant B. & Reynolds III C.F. (1992) Rating chronic illness burden in geropsychiatric practice and research: application of the Cumulative Illness Rating Scale. *Psychiatry Research*; 41: 237-248.

Miller M.D. & Towers A. (1991) *A manual of guidelines for scoring the Cumulative Illness Rating Scale*. Pittsburgh: University of Pittsburgh, School of Medicine, Department of geriatric psychiatry, Western Psychiatric Institute and Clinic.

Miller M.D., Applegate W.B., Elam J.T. & Graney M.J. (1994) Influence of diagnostic classification on outcomes and charges in geriatric assessment and rehabilitation. *Journal of the American Geriatrics Society*; 42(1): 11-15.

Morishita L., Boult C., Ebbitt B., Rambel M., Fallstrom K. & Gooden T. (1995) Concurrent validity of administering the Geriatric Depression Scale and the physical functioning dimension of the SIP by telephone. *Journal of the American Geriatrics Society*; 43(6): 680-683.

Morris J. (1990) *Development of resident assessment system and data base for nursing home residents: report on the trial of the Minimum Data Set for Resident Assessment and Care Screening*. Research Triangle Park, NC: Research Triangle Institute.

Parkerson G.R., Broadhead W.E. & Tse C.K.J. (1990) The Duke Health Profile: A 17-item measure of health and disfunction. *Medical Care*; 28: 1056-1072.

Parmalee P.A., Thuras P.D., Katz I.R. & Lawton M.P. (1995) Validation of the Cumulative Illness Rating Scale in a geriatric residential population. *Journal of the American Geriatrics Society*; 43: 130-137.

Pathy M.S.J., Bayer A., Harding K. & Dibble A. (1992) A randomized trial of case finding and surveillance of elderly people at home. *Lancet*; 340: 890-893.

Patrick D.L., Bush J.W. & Chen M.M. (1973) Toward an operational definition of health. *Journal of Health and Social Behavior*; 14: 6-21.

Pelletier G. (1996) *La population du Québec par territoire de CLSC, de DSC et de RSS, pour la période de 1981 B 2016.* Québec: Ministère de la santé et des services sociaux, Direction générale de la planification et de l'évaluation. "Données statistiques et indicateurs" N°.30. Gouvernement du Québec.

Perneger T.V., Leplege A., Etter J.F. & Rougemont A. (1995) Validation of a French-language version of the MOS 36-Item Short Form Health Survey

(SF-36) in young healthy adults. *Journal of Clinical Epidemiology*; 48(8): 1051-1060.

Pfeiffer E. (1975) *Multidimensional Functional Assessment: the OARS Methodology: A Manual.* Durham, North Carolina: Center for Study of Ageing and Human Development, Duke University.

Polit D.F. & Hungler B.P. (1995) *Nursing research, principles and methods.* Philadelphia: J.P. Lippincott.

Ramsdell J.W. (1991) Geriatric assessment in the home. *Clinics in Geriatric Medicine*; 7(4): 677-693.

Rantz M.J. (1995) Quality measurement in nursing: where are we now? *Journal of Nursing Care Quality*; 9(2): 1-7.

Reuben D.B., Valle L.A., Hays R.D. & Siu A.L. (1995) Measuring physical function in community-dwelling older persons: a comparison of self-administered, interviewer-administered, and performance-based measures. *Journal of the American Geriatrics Society*; 43(1): 17-23

Rinke L.T. (Ed.)(1987) *Outcome measures in home care. Volume I: Research.* New York: National League for Nursing. Publication N°. 21-2194.

Rubenstein L.Z., Aranow H.U., Schloe M., Steiner A., Alessi C.A., Yuhas K.E., Gold M., Kemp M., Raube K., Nisenbaum R., Sttuck A. & Beck J.C. (1994) A home-based geriatric assessment, follow-up and health promotion program: design, methods, ad baseline findings from a 3-year randomized clinical trial. *Aging Clinical and Experimental Research*; 6(2): 105-120.

Rubenstein L.Z., Goodwin M., Hadley E., Patten S.K., Rempusheski V.F., Reuben D. & Winograd C.H. (1991a) Working group recommendations:

targeting criteria for geriatric evaluation and management research. *Journal of the American Geriatrics Society*; 39(Supplement): 37S-41S.

Rubenstein L.Z., Siu A.L. & Wieland D. (1989) Comprehensive geriatric assessment: toward understanding its efficacy. *Aging*; 1: 87-98.

Rubenstein L.Z., Stuck A.E., Siu A.L., & Weiland D. (1991b) Impacts of geriatric evaluation and management programs on defined outcomes: overview of the evidence. *Journal of the American Geriatrics Society*; 39(Sup): 8S-16S.

Rubenstein L.Z., Wieland D. & Bernabei R (1995) *Geriatric assessment technology: the state of the art*. Milano: Editrice Kurtis. 312 p.

Rubin C.D., Sizemore M.Y., Loftis P.A., Adam-Huet B. & Anderson R.J. (1993) The effect of geriatric evaluation and management unit on Medicare reimbursement in a large public hospital: a randomized clinical trial. *Journal of the American Geriatrics Society*; 40: 989-995.

Santé Québec (1995) *Analyses et surveillance # 9*. Québec : Ministère de la Santé et des Services sociaux, Direction générale de la santé publique.

Shaughnessy P.W., Crisler K.S. & Kramer A.M. (1989) *Quality of care indicators in home care: preliminary indicators and direction for future research* Study Paper #2. Denver: Center for Health Policy Research.

Shaughnessy P.W., Crisler K.S., Schlenker R.E., Arnold A.G., Kramer A.M., Powell M.C. & Hittle D.F. (1994) Measuring and assuring the quality of home health care. *Health Care Financing Review*; 16(1): 35-67.

Sheaff R. (1996) *The need for healthcare*. London : Routledge. 228 p.

Silverman M., Musa D., Martin D.C., Lave J.R., Adams J. & Ricci E.M. (1995) Evaluation of outpatient geriatric assessment: a randomized multi-site trial. *Journal of the American Geriatrics Society*; 43(7): 733-740.

Siu A.L., Kravitz R.L., Keeler E., Hemmerling K., Kington R., Davis J.W., Mitchell A., Burton T.M., Morgenstern H., Beers M.H. & Reuben D.B. (1996) Postdischarge geriatric assessment of hospitalized frail elderly patients. *Archives of Internal Medicine*; 156: 76-81.

Stevens A. & Raftery J. (Ed.) (1994) *Health care needs assessment: the epidemiology based needs assessment reviews Volume I* Oxford : Radcliffe Medical Press.

Stevens A. & Raftery J. (Ed.) (1997) *Health care needs assessment: the epidemiology based needs assessment reviews. Second Series* Oxford : Radcliffe Medical Press.

Stevens A. & Gillam S. (1998) Health needs assessment: Needs assessment: from theory to practice. *British Medical Journal* ; 316: 1448-1452.

Stoll T., Gordon C., Seifert B., Richardson K., Malik J., Bacon PA. & Isenberg D.A. (1997) Consistency and validity of patient administered assessment of quality of life by the MOS SF-36; its association with disease activity and damage in patients with systemic lupus erythematosus. *Journal of Rheumatology* ;24(8):1608-1614.

Streiner D.L. & Norman G.R. (1995) *Health measurement scales: A practical guide to their development and use* (2nd ed.). Oxford: Oxford University Press.

Stuck A.E., Siu A.L., Wieland D.G., Adams J. & Rubenstein L.Z. (1993) Comprehensive geriatric assessment: a meta-analysis of controlled trials. *Lancet*; 342: 1032- 1036.

Teresi J.A., Golden A.A., Gurland B.J., Wilder D.E. & Bennett R.G. (1984) Construct validity of indicator scales developed from the Comprehensive Assessment and Referral Evaluation interview schedule. *Journal of Gerontology*; 39: 147-157.

Thomas D.R., Brahan R., Haywood B.P. (1993) Inpatient community-based geriatric assessment reduces subsequent mortality. *Journal of the American Geriatrics Society*; 41(2): 101-104.

Thompson R.E. (1996) Incidence of ventilator-associated pneumonia (VAP) with 14-day circuit change in a subacute environment. *Respiratory Care*; 41(7): 601-606.

Tilquin C., Michelon P., D'Hoore W., Sicotte C., Carrillo E. & Leonard G. (1995) Using the handicap code of the ICIDH for classifying patients by intensity of nursing care requirements. *Disability and Rehabilitation*; 17(3-4): 176-183.

Vézina J., Laprise R., Gourgue M., Parenteau P. & Fréchette M. (1992) A comparison of the diagnostic performance of the Beck Depression Inventory and the Geriatric Depression Scale using ROC analysis. Tirϑ B part: *Les Cahiers de l'École de psychologie*; 316. Université Laval.

Waldman E. & Potter J.F. (1992) A prospective evaluation of the Cumulative Illness Rating Scale. *Aging: Clinical Experimental Research*; 4: 171-178.

Ware J.E.,Jr. (1995) The status of health assessment 1994 *Annual Review of Public Health*; 16: 327-354.

Ware J.E.,Jr., Kosinski M., Bayliss M.S., McHorney C.A., Rogers W.H. & Raczek A. (1995) Comparison of methods for the scoring and statistical analysis of SF-36 health profile and summary measures. Summary of results from the Medical Outcomes Study. *Medical Care*; 33(4): AS264-AS279.

Ware J.E.,Jr., Kosinski M. & Keller S.D. (1994) *SF-36 Physical and Mental Health Summary Scales: a user's manual* (3rd Printing). Boston, MA: The Health Institute, New England Medical Center.

Ware Jr J.E., Snow K.K., Kosinski M. & Gandek B. (1993) *SF-36 Health Survey. Manual and interpretation guide*. Boston, MA: The Health Institute, New England Medical Center.

Weinberger M., Samsa G.P., Hanlon J.T., Schmader K., Doyle M.E., Cowper P.A., Uttech K.M., Cohen H.J. & Feussner J.R. (1991) An evaluation of a brief health status measure in elderly veterans. *Journal of the American Geriatrics Society*; 39(7): 691-694.

Weinberger M., Nagle B., Hanlon J.T., Samsa G.P., Schmader K., Landsman P.B., Uttech K.M., Cowper P.A., Cohen H.J. & Feussner J.R. (1994) Assessing health-related quality of life in elderly outpatients: telephone versus face-to-face administration. *Journal of the American Geriatrics Society*; 42(12): 1295-1299.

Wiggins J.S. (1973). *Personality and prediction: principles of personality assessment*. Reading, Massachusetts: Addison-Wesley Pub. Cie. p. 420.

Wilkin D., Hallam L. & Dodgett M.A. (1992) *Measures of need and outcomes for primary health care*. Oxford: Oxford University. Press.

Wilkinson J.R. & Murray S.A. (1998) Assessment in primary care : practical issues and possible approaches. *British Medical Journal* ; 316 (May 16): 1524-1528.

Williams B. (1994) Comparison of services among different types of home health agencies. *Medical Care*; 32(11): 1134-1152.

Williams T.F., Hill J.G. & Fairbank M.E. (1973) Appropriate placement of the chronically ill and aged: a successful approach by evaluation. *Journal of the American Geriatrics Society*; 266: 132-133.

Williams R. & Wright J. (1998) Epidemiological issues in health needs assessment. *British Medical Journal*; 316 (May 2): 1379-1382.

Witkins B.R. & Altschuld J.W. (1995) *Planning and conducting needs assessment : A practical guide.* Thousand Oaks, California : Sage Publications Inc. ; 302 p.

Wood-Dauphinee S., Gauthier L., Gandek B., Magna L & Pierre U. (1997) Readying a US measure of health status, the SF-36, for use in Canada. *Clinical Investigation in Medicine*; 20(4): 224-238.

Would (1998)

Wright J., Williams R. & Wilkinson J.R. (1998) Development and importance of health needs assessment. *British Medical Journal*; 316 (April 25): 1310-1313.

Yesavage J.A , Brink T.L., Rose T.L., Lum O., Huang V., Adey M. & Leirer V.O. (1983) Development and validation of a geriatric screening scale: a preliminary report. *Journal of Psychiatric Research*; 17(1): 37-49.

Zautra A., Bachrach K. & Hess R. (Eds) (1983) *Strategies for needs assessment in prevention.* New York : Haworth Press Inc. 133 p.

Zung W.W. (1965) A self-rating depression scale. *Archives of General Psychiatry*; 12: 63-70.

APPENDIX A

ENGLISH VERSION OF THE SMAF

Name: _____

File No: _____

EVALUATION OF AUTONOMY

MULTICLIENTELE

HOMECARE SERVICES PROGRAM

RÉGIE RÉGIONALE
DE LA SANTÉ ET DES
SERVICES SOCIAUX
DE MONTRÉAL-CENTRE

STATE OF HEALTH

Specify, if required, the source of information: User, Family or Friend, Evaluator

PROBLEM

1. PERSONAL AND FAMILY HEALTH HISTORY AND CURRENT DIAGNOSES

(physical and mental illness, congenital anomalies, hospitalizations, surgeries, traumas)

Allergies (medication, food, environment):

2. PRESENT PHYSICAL HEALTH

Difficulties experienced or specific observations:	no	yes	If yes, explain:
• Digestive function (pain, nausea vomiting, diarrhea, constipation, gas...)	☐	☐	
• Respiratory function (pain, cough, expectoration, breathing difficulties...)	☐	☐	
• Cardiovascular function (pain, palpitation, pacemaker...)	☐	☐	
• Genital and unirary function (pain, urinary problem, gynecological or genital problem...)	☐	☐	
• Motor function (pain, deformation, limitation of movement, strength, coordination, trembling, balance, physical endurance...)	☐	☐	
• Sensory function: eyes, ears, nose, mouth, touch (pain, discharge, inflammation, sensitivity...)	☐	☐	
• Skin condition (wounds, redness, swelling, discharge...)	☐	☐	
• Other information	☐	☐	

Height: _____ Weight: _____ Gain or loss of weight: _____

If relevant: B.P. _____ Pulse _____ Resp. _____ T° _____

Comments:

Problem to resolve — No [N] Yes [Y]

Specify, if required, the source of information: User, Family or Friend, Evaluator

PROBLEM

3. PRESENT PSYCHIC HEALTH
(depression, suicidal, paronoia, delirium, violent, behavior, mania...)

Difficulties experienced or specific observations: no ☐

yes ☐ Explain: _____

_____

_____

_____

Comments: _____

_____

_____

Problem identified — No ☐ N — Yes ☐ Y

4. SPECIFIC CARE (care required by the user: bandages, various catheter care, oxygen, aspiration of secretions, postural drainage, peritoneal dialysis...)

no ☐

yes ☐ Description, frequency and by whom: _____

_____

_____

Comments: _____

_____

_____

Problem identified — No ☐ N — Yes ☐ Y

5. MEDICATION

Name of pharmacy: _____ Tel.: _____

Name	Dose and frequency	User's explanation of reason	Prescribed yes	Prescribed no

Side effects: no ☐ yes ☐ Medication compliance: no ☐ yes ☐

Comments: _____

_____

_____

Problem identified — No ☐ N — Yes ☐ Y

Specify, if required, the source of information: User, Family or Friend, Evaluator **PROBLEM**

6. PRESENT HEALTH SERVICES (medical, rehabilitation, alternative medicine, psychological, podiatry...)

Regular medical follow up: no ☐ yes ☐

Family physician: _____ Tel.: _____

Medical specialist: _____ Tel.: _____

Medical specialist: _____ Tel.: _____

Others: _____ Tel.: _____

_____ Tel.: _____

Comments: _____

_____

_____

Problem identified **No** _____ N

Yes _____ Y

LIVING HABITS

Specify, if required, the source of information: User, Family or Friend, Evaluator **PROBLEM**

1. NUTRITION

Daily diet:

Milk and milk products yes ☐ no ☐ Meat and meat substitute yes ☐ no ☐

Fruits and vegetables yes ☐ no ☐ Bread and cereals yes ☐ no ☐

Quantity of liquid intake _____ cups or glasses

Diet no ☐ yes ☐ Explain: _____

Prescribed: yes ☐ no ☐ Followed: yes ☐ no ☐

Other observations (time of meals, appetite, eats with whom and where...):

Difficulties experienced or specific observations: no ☐

yes ☐ Explain: _____

_____

_____

_____

Currently, eating habits are satisfactory for the user: yes ☐ no ☐

Dentition (pain, difficulty chewing, prosthesis...):

Difficulties experienced or specific observations: no ☐

yes ☐ Explain: _____

_____

_____

_____

Comments: _____

_____

_____

Problem identified **No** _____ N

Yes _____ Y

Specify, if required, the source of information: User, Family or Friend, Evaluator

PROBLEM

2. SLEEP (insomnia, awakens and why, fear, agitation, medication, time of a rising and retiring, nap...)

Difficulties experienced or specific observations: no ☐

yes ☐ Explain: _____

_____

_____

Currently sleeping patterns are satisfactory for the user: yes ☐ no ☐

Comments: _____

_____

_____

Problem identified — No N — Yes Y

3. CONSUMPTION OF TOBACCO (type of consumption, quantity, supervision required, motivation to stop habit...)

Smokes no ☐

yes ☐ Explain: _____

_____

_____

This habit presently constitutes a problem for the user: yes ☐ no ☐

Comments: _____

_____

_____

Problem identified — No N — Yes Y

4. ALCOHOL AND DRUG CONSUMPTION (odours of alcohol, exterior indicators, type of consumption, quantity, frequency, supervision required, motivation to change habit...)

Uses alcohol or drugs no ☐

yes ☐ Explain: _____

_____

_____

This habit presently constitutes a problem for the user: yes ☐ no ☐

Comments: _____

_____

_____

Problem identified — No N — Yes Y

5. PERSONAL AND LEISURE ACTIVITIES (usual activities, desired activities, obstacles...)

Difficulties experienced or specific observations: no ☐

yes ☐ Explain: _____

_____

_____

_____

These personal activities are presently satisfactory for the user: yes ☐ no ☐

Comments: _____

_____

_____

Problem identified — No N — Yes Y

**STABILITY OF THE RESOURCE

DISABILITIES HANDICAP

ACTIVITIES OF DAILY LIVING

Specify, if required, the cause, the deficiency responsible for the disability and the reaction of the user to this disability:

1. EATING

0 Feeds independently

-0.5 With difficulty

-1 Feeds self but needs stimulation or supervision
OR food must first be cut or chopped

-2 Needs partial help to eat
OR dishes must be presented one by one

-3 Must be fed entirely by another person
OR wears naso gastric tube OR gastrostomy

☐ Naso gastric tube ☐ Gastrostomy

Presently the user has the resources (assistance or supervision) needed to compensate for this disability yes ☐ no ☐

*Resources: ☐ ☐ ☐

0 / -1 / -2 / -3

**Stability: − + •

COMMENTS (technical assistance used...): _____

2. WASHING

0 Washes independantly

-0.5 With difficulty

-1 Washes self but needs stimulation
OR needs supervision
OR needs preparation
OR only needs help for complete weekly bath

-2 Needs help for daily wash but participates actively

-3 Must be washed by another person

Presently the user has the resources (assistance or supervision) needed to compensate for this disability yes ☐ no ☐

*Resources: ☐ ☐ ☐

0 / -1 / -2 / -3

**Stability: − + •

COMMENTS (habits and frequency: bath, shower, hair washing, equipm,ent used, assistance for transfer...): _____

3. DRESSING

0 Dresses independently

-0.5 With difficulty

-1 Dresses self but needs stimulation
OR needs supervision
OR clothing must be prepared and presented
OR needs help with finishing touches (buttons, shoe laces)

-2 Needs help dressing

-3 Must be dressed by another person

Presently the user has the resources (assistance or supervision) needed to compensate for this disability yes ☐ no ☐

*Resources: ☐ ☐ ☐

0 / -1 / -2 / -3

**Stability: − + •

COMMENTS (usual clothing, technical assistance used...): _____

* Resources: 0. user himself, 1. family, 2. neighbour 3. employee 4. homemaker 5. nurse 6. volunteer 7. other

** Stability: in future weeks, it is foreseeable that these resources will: − decrease + increase • remain stable or not applicable

**STABILITY OF THE RESOURCE

DISABILITIES HANDICAP

Specify, if required, the cause, the deficiency responsible for the disability and the reaction of user to this disability:

4. GROOMING (brush teeth, comb hair, shave, nail care)

- [0] Grooms independently
- [-0.5] With difficulty
- [-1] Needs stimulation or supervision to be groomed
- [-2] Needs help for grooming
- [-3] Must be groomed by another person

Presently the user has the resources (assistance or supervision) needed to compensate for this disability: yes ☐ no ☐

*Resources: ☐ ☐ ☐

[0] → [-] [+] [·]

[-1] [-2] [-3]

COMMENTS (technical assistance used...): _____

5. BLADDER FUNCTION

- [0] Normal voiding
- [-1] Occasional incontinence OR dribbling OR needs reminding to urinate frequently to avoid incontinence
- [-2] Frequent urinary incontinence
- [-3] Complete and habitual urinary incontinence OR wears a diaper OR indwelling catheter OR urinary condom

☐ urinary condom ☐ indwelling catheter
☐ diaper/undergarments

Presently the user has the resources (assistance or supervision) needed to compensate for this disability: yes ☐ no ☐

*Resources: ☐ ☐ ☐

[0] → [-] [+] [·]

[-1] [-2] [-3]

COMMENTS: _____

6. BOWEL FUNCTION

- [0] Normal bowel function
- [-1] Occasional faecal incontinence OR needs cleansing enema occasionally
- [-2] Frequent faecal incontinence OR needs regular cleansing enema
- [-3] Always incontinent OR wears diaper/OR ostomy OR needs regular anal stimulation

☐ ostomy ☐ diaper/undergarments
☐ anal stimulation ☐ enema

Presently the user has the resources (assistance or supervision) needed to compensate for this disability: yes ☐ no ☐

*Resources: ☐ ☐ ☐

[0] → [-] [+] [·]

[-1] [-2] [-3]

COMMENTS _____

* Resources: 0. user himself, 1. family, 2. neighbour 3. employee 4. homemaker 5. nurse 6. volunteer 7. other
** Stability: in future weeks, it is foreseeable that these resources will: [-] decrease [+] increase [·] remain stable or not applicable

**STABILITY OF THE RESOURCE

DISABILITIES HANDICAP

Specify, if required, the cause, the deficiency responsible for the disability and the reaction of user to this disability:

7. TOILETTING

[0] Toilets self (sits down, perineal care, dresses and stands up)

[-0.5] With difficulty

[-1] Needs supervision for toiletting OR uses commode, bedpan or urinal alone

[-2] Needs help for toiletting, or using commode, urinal or bedpan

[-3] Does not use toilet, commode, urinal or bedpan

☐ bedpan ☐ commode ☐ urinal

Presently the user has the resources (assistance or supervision) needed to compensate for this disability yes ☐ no ☐

*Resources: ☐ ☐ ☐

[0] [-] [+] [·] [-1] [-2] [-3]

COMMENTS (frequency, equipment used...):

MOBILITY

1. TRANSFERS to and from bed, chair or wheelchair

[0] Gets in and out of bed/chair alone

[-0.5] With difficulty

[-1] Gets in and out of bed/chair alone but needs stimulation OR supervision OR guidance in his movements

[-2] Needs help to get in and out of bed/chair

[-3] Bedridden (must be lifted in and out of bed/chair)

☐ patient lifting device ☐ transfer board

Presently the user has the resources (assistance or supervision) needed to compensate for this disability yes ☐ no ☐

*Resources: ☐ ☐ ☐

[0] [-] [+] [·] [-1] [-2] [-3]

COMMENTS (assistance from how many people, range of mobility in bed...):

2. WALKING INSIDE

[0] Walks independently (with or without cane, prosthesis, orthosis)

[-0.5] With difficulty

[-1] Walks independently but needs guidance, stimulation, supervision in certain circumstances OR unsafe gait OR uses a walker

[-2] Needs help to walk

[-3] Does not walk

☐ cane ☐ tripod ☐ quadripod ☐ walker

Presently the user has the resources (assistance or supervision) needed to compensate for this disability yes ☐ no ☐

*Resources: ☐ ☐ ☐

[0] [-] [+] [·] [-1] [-2] [-3]

COMMENTS (range of mobility...):

* Resources: 0. user himself, 1. family, 2. neighbour 3. employee 4. homemaker 5. nurse 6. volunteer 7. other

** Stability: in future weeks, it is foreseeable that these resources will: [-] decrease [+] increase [·] remain stable or not applicable

**STABILITY OF THE RESOURCE

DISABILITIES HANDICAP

Specify, if required, the cause, the deficiency responsible for the disability and the reaction of user to this disability.

3. WALKING OUTSIDE

[0] Walks independently (with or without cane, prosthesis, orthosis)

[-0.5] With difficulty

[-1] Walks independently but needs guidance, stimulation, supervision in certain circumstances
OR unsafe gait
OR uses a walker

[-2] Needs help to walk

[-3] Does not walk

☐ cane ☐ tripod ☐ quadripod ☐ walker

Presently the user has the resources (assistance or supervision) needed to compensate for this disability: yes ☐ no ☐

*Resources: ☐ ☐ ☐

[0] [-1] [-2] [-3] [-] [+] [•]

COMMENTS (range of mobility...): _____

4. PUTTING ON PROSTHESIS OR ORTHOSIS

[0] Does not wear prosthesis or orthosis

[-1] Puts on prosthesis or orthosis independently

[-1.5] With difficulty

[-2] Putting on of prosthesis or orthosis needs verification

[-3] Prosthesis or orthosis must be put on by another person

Type of prosthesis or orthosis: _____

Presently the user has the resources (assistance or supervision) needed to compensate for this disability: yes ☐ no ☐

*Resources: ☐ ☐ ☐

[0] [-1] [-2] [-3] [-] [+] [•]

COMMENTS : _____

5. PROPELLING A WHEELCHAIR

[0] Does not need a wheel chair to mobilize

[-1] Propels wheelchair by himself

[-1.5] With difficulty

[-2] Needs to have wheelchair pushed

[-3] Unable to use wheelchair (must be transported on stretcher)

Wheelchair: ☐ standard wheelchair ☐ motorized wheelchair ☐ wheelchair with unilateral drive ☐ scooter

The user's actual residence allows:
wheelchair accessibility no ☐ yes ☐
to overcome this disability no ☐ yes ☐

User has the necessary assistance to compensate for this disability: yes ☐ no ☐

*Resources: ☐ ☐ ☐

[0] [-1] [-2] [-3] [-] [+] [•]

COMMENTS : _____

* Resources: 0. user himself, 1. family, 2. neighbour 3. employee 4. homemaker 5. nurse 6. volunteer 7. other
** Stability: in future weeks, it is foreseeable that these resources will: [-] decrease [+] increase [•] remain stable or not applicable

**STABILITY OF THE RESOURCE

DISABILITIES HANDICAP

Specify, if required, the cause, the deficiency responsible for the disability and the reaction of user to this disability:

6. USING STAIRS

[0] Goes up and down stairs alone

[-0.5] With difficulty

[-1] Goes up and down stairs but requires guidance, supervision or stimulation
OR does not safely negotiate stairs

[-2] Needs help to go up and down stairs

[-3] Does not use stairs

The user must use stairs:
- ☐ no
- ☐ yes

Presently the user has the resources (assistance or supervision) needed to compensate for this disability: yes ☐ no ☐

*Resources: ☐ ☐ ☐

[0] [-] [+] [·] [-1] [-2] [-3]

COMMENTS _____

COMMUNICATION

1. VISION

[0] Sees adequately with or without corrective lenses

[-1] Visual acuity decreased but sees enough to do activities of daily living

[-2] Only sees outlines of objects and needs supervision in activities of daily living

[-3] Blind

☐ corrective lenses ☐ magnifying glass

Presently the user has the resources (assistance or supervision) needed to compensate for this disability: yes ☐ no ☐

*Resources: ☐ ☐ ☐

[0] [-] [+] [·] [-1] [-2] [-3]

COMMENTS (which eye...): _____

2. HEARING

[0] Hears adequately whih or without hearing aid

[-1] Hears if spoken to in a loud voice
OR needs to have hearing aid installed for him/her

[-2] Only hears shouting or certain words
OR lip-reads
OR understands gestures

[-3] Completely deaf and unable to understand what is said to him/her

☐ hearing aid

Presently the user has the resources (assistance or supervision) needed to compensate for this disability: yes ☐ no ☐

*Resources: ☐ ☐ ☐

[0] [-] [+] [·] [-1] [-2] [-3]

COMMENTS (which ear, telephone adaptation and other technical assistance...): _____

* Resources: 0. user himself, 1. family, 2. neighbour 3. employee 4. homemaker 5. nurse 6. volunteer 7. other
** Stability: in future weeks, it is foreseeable that these resources will: [-] decrease [+] increase [·] remain stable or not applicable

SMAF

**STABILITY OF THE RESOURCE

DISABILITIES HANDICAP

Specify, if required, the cause, the deficiency responsible for the disability and the reaction of user to this disability:

3. SPEECH

- [0] Speaks normally
- [-1] Has a speech impairment but able to express his thought
- [-2] Has a major speech impairment but able to express basic needs OR answers simple questions (yes/no)
- [-3] Unable to communicate

Presently the user has the resources (assistance or supervision) needed to compensate for this disability: yes ☐ no ☐

*Resources: ☐ ☐ ☐

**: [0] [-1] [-2] [-3] [−] [+] [·]

COMMENTS (how does user compensate for this disability...): _____

COMPREHENSION AND WRITTEN EXPRESSION: _____

MENTAL FUNCTIONS

Specify, if required, how long user has been disabled and his reaction to this disability:

1. MEMORY

- [0] Normal memory
- [-1] Short term memory deficit (names, appointments) but remembers important events
- [-2] Frequent memory lapses (turning off stove, taking medication, putting things away, eating, visitors)
- [-3] Near total amnesia

Presently the user has the resources (assistance or supervision) needed to compensate for this disability: yes ☐ no ☐

*Resources: ☐ ☐ ☐

**: [0] [-1] [-2] [-3] [−] [+] [·]

COMMENTS: _____

2. ORIENTATION

- [0] Well oriented in time, space and to people
- [-1] Sometimes disoriented in time, space and to people
- [-2] Only oriented in the short term (time of day), in the usual living environment and with familiar people
- [-3] Complete disorientation

Presently the user has the resources (assistance or supervision) needed to compensate for this disability: yes ☐ no ☐

*Resources: ☐ ☐ ☐

**: [0] [-1] [-2] [-3] [−] [+] [·]

COMMENTS: _____

* Resources: 0. user himself, 1. family, 2. neighbour 3. employee 4. homemaker 5. nurse 6. volunteer 7. other

** Stability: in future weeks, it is foreseeable that these resources will: [−] decrease [+] increase [·] remain stable or not applicable

**STABILITY OF THE RESOURCE

DISABILITIES **HANDICAP**

Specify, if required, the cause, the deficiency responsible for the disability and the reaction of user to this disability:

3. COMPREHENSION

- [0] Understands instructions and requests
- [-1] Slow to understand instructions and requests
- [-2] Partial understanding even after repeated instructions
- [-3] Unaware of what goes on around him

Presently the user has the resources (assistance or supervision) needed to compensate for this disability — yes ☐ / no ☐

*Resources: ☐ ☐ ☐

[0] → [-] [+] [·]

[-1] [-2] [-3]

COMMENTS: _____

4. JUDGEMENT

- [0] Evaluates situations and makes sound decisions
- [-1] Evaluates situations but needs help in making sound decisions
- [-2] Poorly evaluates situations and only makes sound decisions with strong suggestion
- [-3] Unable to evaluate or make decisions; dependent for decision making

Presently the user has the resources (assistance or supervision) needed to compensate for this disability — yes ☐ / no ☐

*Resources: ☐ ☐ ☐

[0] → [-] [+] [·]

[-1] [-2] [-3]

COMMENTS : _____

5. BEHAVIOR

- [0] Adequate
- [-1] Minor behavioral problems (whimpering, emotional lability, apathy, stubbornness) requiring occasional supervision OR a reminder to control inappropriate behavior OR a stimulation
- [-2] Behavioral problems requiring more intensive supervision (aggressive towards self and others, disturbs others)
- [-3] Dangerous, requires restraint OR tries to injure self or others OR tries to run away

Presently the user has the resources (assistance or supervision) needed to compensate for this disability — yes ☐ / no ☐

*Resources: ☐ ☐ ☐

[0] → [-] [+] [·]

[-1] [-2] [-3]

COMMENTS : _____

* Resources: 0. user himself, 1. family, 2. neighbour 3. employee 4. homemaker 5. nurse 6. volunteer 7. other

** Stability: in future weeks, it is foreseeable that these resources will: [-] decrease [+] increase [·] remain stable or not applicable

**STABILITY OF THE RESOURCE

INCAPACITÉS HANDICAP

ACTIVITIES OF DOMESTIC LIFE

Specify, if required, the cause, the deficiency responsible for the disability and the reaction of user to this disability:

1. HOUSEKEEPING

- [0] Does housekeeping alone
- [-0.5] With difficulty
- [-1] Does housekeeping but needs supervision or stimulation to ensure cleanliness OR needs help for occasional housework (floors, windows)
- [-2] Needs help for daily housekeeping
- [-3] Does not do housekeeping

Presently the user has the resources (assistance or supervision) needed to compensate for this disability: yes ☐ no ☐

*Resources: ☐ ☐ ☐

[0] [-1] [-2] [-3] [−] [+] [·]

COMMENTS : _____

2. MEAL PREPARATION

- [0] Prepares own meals
- [-0.5] With difficulty
- [-1] Prepares meals but needs stimulation to maintain adequate nutrition
- [-2] Only prepares light meals OR heats up pre-prepared meals
- [-3] Does not prepare meals

Presently the user has the resources (assistance or supervision) needed to compensate for this disability: yes ☐ no ☐

*Resources: ☐ ☐ ☐

[0] [-1] [-2] [-3] [−] [+] [·]

COMMENTS _____

3. SHOPPING

- [0] Plans and does shopping independently (food, clothing)
- [-0.5] With difficulty
- [-1] Shops but needs delivery service
- [-2] Needs help to plan and/or shop
- [-3] Does not shop

Presently the user has the resources (assistance or supervision) needed to compensate for this disability: yes ☐ no ☐

*Resources: ☐ ☐ ☐

[0] [-1] [-2] [-3] [−] [+] [·]

COMMENTS : _____

* Resources: 0. user himself, 1. family, 2. neighbour 3. employee 4. homemaker 5. nurse 6. volunteer 7. other

** Stability: in future weeks, it is foreseeable that these resources will: [−] decrease [+] increase [·] remain stable or not applicable

**STABILITY OF THE RESOURCE

DISABILITIES HANDICAP

Specify, if required, the cause, the deficiency responsible for the disability and the reaction of user to this disability:

4. LAUNDRY

0 Does laundry alone

-0.5 With difficulty

-1 Does laundry alone but needs supervision or stimulation to maintain standards of cleanliness

Needs help to do laundry

-2 Does not do laundry

-3

Presently the user has the resources (assistance or supervision) needed to compensate for this disability yes ☐ no ☐

*Resources: ☐ ☐ ☐

0 → − + •

-1 -2 -3

COMMENTS : _____

5. TELEPHONE

0 Uses telephone independently (including use of directory)

-0.5 With difficulty

-1 Answers telephone but only dials a few memorized numbers or emergency numbers

-2 Communicates by telephone but does not dial numbers or does not lift the receiver

-3 Does not use the telephone

Presently the user has the resources (assistance or supervision) needed to compensate for this disability yes ☐ no ☐

*Resources: ☐ ☐ ☐

0 → − + •

-1 -2 -3

COMMENTS (special equipment...): _____

6. TRANSPORTATION

0 Able to use some mode of transportation alone (car, taxi, bus)

-0.5 With difficulty

-1 Must be accompanied to use transportation OR uses adapted transport alone

-2 Uses car or adapted transport only if accompanied and has help getting in and out of the vehicle

-3 Must be transported in ambulance

Presently the user has the resources (assistance or supervision) needed to compensate for this disability yes ☐ no ☐

*Resources: ☐ ☐ ☐

0 → − + •

-1 -2 -3

COMMENTS : _____

* Resources: 0. user himself, 1. family, 2. neighbour 3. employee 4. homemaker 5. nurse 6. volunteer 7. other

** Stability: in future weeks, it is foreseeable that these resources will: − decrease + increase • remain stable or not applicable

**STABILITY OF THE RESOURCE

DISABILITIES HANDICAP

Specify, if required, the cause, the deficiency responsible for the disability and the reaction of the user to this disability:

7. MEDICATION USE

[0] Takes medication alone according to prescription OR does not need medication

[-0.5] With difficulty

[-1] Needs supervision to ensure compliance to prescription OR pill box

[-2] Takes medication if prepared in advance

[-3] Must be given medication as prescribed

☐ pill box

Presently the user has the resources (assistance or supervision) needed to compensate for this disability — yes ☐ / no ☐

*Resources: ☐ ☐ ☐

[0] [-1] [-2] [-3] [−] [+] [·]

COMMENTS : _____

8. BUDGETING

[0] Manages finances alone without difficulty

[-0.5] With difficulty

[-1] Needs supervision for certain major transactions

[-2] Needs assistance for regular transaction (cashing a cheque, paying bills) but able to handle pocket money which is given to him

[-3] Does not manage budget

Presently the user has the resources (assistance or supervision) needed to compensate for this disability — yes ☐ / no ☐

*Resources: ☐ ☐ ☐

[0] [-1] [-2] [-3] [−] [+] [·]

COMMENTS (protective regime): _____

* Resources: 0. user himself, 1. family, 2. neighbour 3. employee 4. homemaker 5. nurse 6. volunteer 7. other

** Stability: in future weeks, it is foreseeable that these resources will: [−] decrease [+] increase [·] remain stable or not applicable

PSYCHOSOCIAL SITUATION

Specify, if required, the source of information: User, Family or Friend, Evaluator

PROBLEM

1. SOCIAL HISTORY (occupation, marriage, divorce, grief, education, immigration, moves, other major events...)

Comments: _____

Problem identified — No _____ N — Yes _____ Y

2. FAMILY SITUATION

Composition of the family (age, sex, place of residence)

Family dynamics (interaction of the user with his family and between family members, satisfaction of the user with regard to his family situation, how his family reacts to or is affected by the user's situation, indications of abuse, violence, neglect...)

Comments: _____

Problem identified — No _____ N — Yes _____ Y

3. SOCIAL NETWORK (including school and work environment)

Significant people: (friends, neighbours, colleagues, teachers...)

(cont'd page 17)

Specify, if required, the source of information: User, Family or Friend, Evaluator

PROBLEM

3. SOCIAL NETWORK (including school and work environment) (continued)

Relationship dynamics (interaction of the user with his network, satisfaction of the user with regard to his relationship with the network, how his network reacts to or is affected by his situation, indications of abuse, violence, neglect...)

Comments: _____

Problem identified — No [N] / Yes [Y]

4. COMMUNITY, PUBLIC OR PRIVATE RESOURCES (volunteers, associations, day centers, adapted transport, emergency telephone system, services included in the lease or contract...)

Explain the type and frequency of services: _____

Comments: _____

Problem identified — No [N] / Yes [Y]

5. AFFECTIVE STATE (mood, self-esteem, sense of usefulness, of isolation, anxiety...)

Comments: _____

Problem identified — No [N] / Yes [Y]

6. PERCEPTION OF THE CLIENT (how he perceives his situation, reacts or adapts to it, motivation, solutions foreseen...)

Comments: _____

Problem identified — No [N] / Yes [Y]

Specify, if required, the source of information. User, Family or Friend, Evaluator **PROBLEM**

7. SEXUALITY (satisfaction of the client, preoccupation, socially unacceptable behavior...)

Difficulties experienced or specific observations: no ☐

yes ☐ Explain: _____

_____

_____

_____

_____

Comments: _____

_____ **Problem identified** No ☐ N Yes ☐ Y

_____

8. PERSONAL, CULTURAL, AND SPIRITUAL BELIEFS AND VALUES (expression, particularities...)

Difficulties experienced or specific observations: no ☐

yes ☐ Explain: _____

_____

_____

_____

_____

Comments: _____

_____ **Problem identified** No ☐ N Yes ☐ Y

_____

ECONOMIC CONDITIONS

Specify, if required, the source of information: User, Family or Friend, Evaluator **PROBLEM**

CAPACITY TO MEET FINANCIAL OBLIGATIONS ACCORDING TO PRESENT REVENU (rent, food, clothing, medication...)

Difficulties experienced or specific observations: no ☐

yes ☐ Explain: _____

_____

_____

_____

_____

Does the user benefit from one of the following programs: Guaranteed income supplement, Quebec pension, Logirente, Disability pension, Income security, Special family Allowance, other.

no ☐

yes ☐ Explain: _____

_____

_____

Comments: _____

_____ **Problem identified** No ☐ N Yes ☐ Y

_____

PHYSICAL ENVIRONMENT

Specify, if required, the source of information: User, Family or Friend, Evaluator — PROBLEM

1. HOUSING CONDITIONS (salubrity, space, security, satisfaction...)

Difficulties experienced of specific observations: no ☐

yes ☐ Explain: _____

_____

_____

_____

_____

_____

Owner ☐ Renter ☐ Boarder ☐

Lives there since _____ Residence on _____ floor

Number of rooms _____ Access: elevator ☐ internal stairway ☐ external stairway ☐

Comments: _____

_____ Problem identified — No N / Yes Y

_____

2. ACCESSIBILITY (architectural barriers, location of equipment...)

Difficulties experienced or specific observations: no ☐

yes ☐ Explain: _____

_____

_____

_____

_____

_____

Comments: _____

_____ Problem identified — No N / Yes Y

_____

3. PROXIMITY OF SERVICES (grocery store, bank, church, laundry...)

Difficulties experienced or specific observations: no ☐

yes ☐ Explain: _____

_____

_____

_____

_____

_____

Comments: _____

_____ Problem identified — No N / Yes Y

_____

SUMMARY (context of the evaluation, relationship between the various elements evaluated, user's expectations, risk factors, suggested orientation)

Date: _____ Signature: _____

APPENDIX B

ENGLISH VERSION OF THE SF

CLSC ALBERT SAMSON

File No.: _____

HOME SERVICES
ESTRIE REGION

CLIENT EVALUATION FORM

This form is used for client evaluation and for home-services applications. Please indicate the service(s) desired and complete all pertinent parts of the questionnaire, as indicated below.

☐ CLSC SERVICES	pages 1 to 12, inclusive
☐ SIMAD	pages 1 to 12, inclusive
☐ DIRECT ALLOWANCES	pages 1 to 12, inclusive
☐ TRANSPORTATION TO HOME	pages 1 and 12
FAMILY SUPPORT	
☐ INTELLECTUAL IMPAIRMENT	pages 1, 12, and Appendix I
☐ PHYSICAL IMPAIRMENT	pages 1, 12, and Appendix I
☐ MENTAL HEALTH	pages 1, 12, and Appendix II (in preparation)
OTHERS:	
☐ DAY CENTER	pages 1 to 12 incl.
☐ TEMPORARY RESIDENCE	pages 1 to 12 incl.
☐ OTHERS, SPECIFY:_____	according to needs

☐ First evaluation Date: _____ (y m d) _____ Name of the evaluator

☐ Second evaluation Date: _____ (y m d) _____ Name of the evaluator

☐ Third evaluation Date: _____ (y m d) _____ Name of the evaluator

N.B.: When reevaluating or updating, make your entries on the form, initial and date them, then send a photocopy of them with a copy of page 1, entitled "Identification".

File No.: _____

1. IDENTIFICATION

QC Health Insurance: |_____|_____|_____| Name at birth: _____

Usual name: _____ First name: _____

Date of birth: _____ Language: F ☐ E ☐ Other: _____

Address: _____
House number Street Apt. City or Town

Postal code: _____ Telephone: _____

Environment: ☐ Urban (5000 and over) ☐ Rural

Mother's maiden name and first name: _____

Father's name and first name: _____

Sex: F ☐ M ☐ Civil status: Single ☐ Widowed ☐ Divorced ☐
Married ☐ Separated ☐

Type of residence: Home owner ☐ Tenant ☐ Foster family ☐
RH ☐ Room and board ☐ Other: _____ (Specify)

Occupation: Full-time job ☐ Part-time job ☐
Seeking job ☐ Full-time student ☐
Part-time student ☐ At home ☐ Other: _____ (Specify)

Religion: _____

Family setting: ☐ Living alone ☐ As a couple ☐ With family member
☐ Other: _____ (Specify)

(Specify)

Number of children: _____ aged from _____ to _____ years

Number of children residing at home: _____

Pets: _____ Specify: _____

Contact: _____ Relation to the individual: _____ Tel.: _____

Name of legal representative (if under guardianship): _____

PROFILE OF BENEFICIARY: In the case of persons with multiple handicaps, use the code corresponding to the dominant impairment upon filing.

☐*	Post-operative patient	☐*	Acute illness, short-term convalescent
☐	Long-term illness	☐	Physically impaired
☐	Intellectually impaired	☐	Preterminal or terminally-ill patient
☐	Psychological disorder	☐	Individual or family experiencing adaptation difficulties
☐	Other		

* Date (if pertinent): _____

File No.: _____

2. HEALTH AND LIFE STYLE

HEALTH (Medical diagnosis, digestive problems, insomnia, dizziness, special diet, allergies, height and weight, and so on.)

LIFE STYLE (Tobacco and alcohol use, sleeping schedule, eating habits, activities, and so on.)

3. FUNCTIONAL AUTONOMY

File No.: _____

	Which of the following can you do?	without assistance	with assistance	by someone else	activity not done	If no assistance is needed, state whether unusual effort on the part of the client is required If assistance is needed, state the type and who provides it. If the activity is done by someone other than the client or not at all, specify the reasons. If they are beyond the client's control, give an appreciation of the clients POTENTIAL to perform the activity.
Dietary	• Serve yourself food					
	• Eat					
	• Prepare light meals (lunch)					
	• Prepare complete meals					
Hygiene	• Wash yourself					
	• Shave/use beauty products					
	• Bathe or shower					
	• Wash your hair					
	• Oral hygiene					
	• Manicure/pedicure					
	• Dress/undress yourself					
	• Use bathroom					
Mobility	• Get up/go to bed					
	• Walk					
	• Go outside in the summer					
	• Go outside in the winter					
	• Use stairs					
	• Go shopping					
	• Use mass transit in the summer					
	• Use mass transit in the winter					
	• Use the telephone					
Cleaning	• Do regular housework					
	• Do the laundry					
	• Do heavy housework					
	• Other					

ditional information : _____

aken from "Eros, CTMPS 85)

File No.: _____

4. MOBILITY AND SENSORY CAPACITY

- **MOBILITY**

The client is: ☐ right-handed ☐ left-handed ☐ ambidextrous

If the client has limited movement (dexterity, ability, amplitude), specify the affected part (e.g., left arm, right arm, both arms), describe the limitation, and indicate the date of occurrence.

_____

_____

_____

If the client has limited mobility, is he/she confined:

		REASONS
☐	to bed	_____
☐	to his/her room	_____
☐	to his/her home	_____
☐	other	_____

Indicate the aids used:

☐ cane ☐ walker ☐ rail, support ☐ lift ☐ orthesis ☐ prosthesis
☐ three-legged cane ☐ four-legged cane ☐ bath bench
☐ ordinary wheelchair ☐ motorized wheelchair
☐ Specify other: _____

Assistance required: ☐ No ☐ Yes Specify: _____

_____

_____

Has the client already had recourse to rehabilitation for his/her current mobility difficulties (occupational therapy, physiotherapy, other)?

☐ If yes, specify the results (type, date, duration, frequency, location, and so on)

_____

_____

_____

☐ If not, why not? _____

_____

Should the client be referred for rehabilitation? ☐ Yes ☐ No Specify: _____

_____

_____

File No.: _____

SENSORY CAPACITY

'pacity	Adequate	Inadequate	Specify the problem, the type of compensation used (glasses, hearing aid), the level of loss, and so on.
SIGHT			
HEARING			
SPEECH			
OTHER (touch, taste, smell) Specify: _____			

5. SPECIAL CARE REQUIRED

BODILY FUNCTIONS

'rinary: Frequency: _____

ncontinence: Yes ☐ No ☐ Day ☐ Night ☐ Frequency over 24 hours: _____

Decify the type of compensation used: (e.g., condom, urinal, incontinence garment)

_____

ssistance required ☐ Required assistance provided by: _____

...inal: Frequency: _____

ncontinence: Yes ☐ No ☐ Day ☐ Night ☐ Frequency over 24 hours: _____

Constipation: Yes ☐ No ☐

Decify the type of compensation used: (incontinence garment)

_____

equired assistance, if any, provided by:

_____

ther (perspiration): _____

TREATMENTS

Dressings

Yes ☐ No ☐

Specify the type	Frequency - duration	Assistance, if required, provided by:
☐ Dry or moist		
☐ Suppurating wound		
☐ Dressing with medication		
☐ Other. Specify:		

	Frequency - duration	Assistance, if required, provided by:
Oxygen Yes ☐ No ☐	Number of hours	
Insulin Yes ☐ No ☐		
Stoma Yes ☐ No ☐		
Rectal curage Yes ☐ No ☐		
Other. Specify:		

Medication

Product	Prescription Details (dose, posology, frequency)

Assistance, if required, provided by: _____

Specify the type of compensation used: _____

File No.: _____

6. INTELLECTUAL APTITUDE

Intellectual Aptitude	Specify the problem	Specify the required assistance or the type of compensation. Assistance provided by:
• Temporal orientation: Able to give the day, date, year, and season.		
• Spatial orientation: Able to state in which town they live. Able to locate the bathroom.		
• Recognition: Who am I? Who else is with us?		
• Short-term memory: Ask the client to remember three objects that you name. Ten minutes later, ask him/her to repeat them. When did you leave the hospital? When did I see you last?		
• Long-term memory: What is your birth date? When is your wedding anniversary? Where were you born?		
• Attention-concentration: Is the client able to read or carry on another activity for several minutes? Can the client begin and finish activities such as eating and dressing?		
• Comprehension: Stand up, get me a cup (or another object), and bring it back to me. Subtract 3 from 20, then continue subtracting by 3.		
• Judgement: What would you do if you found a stamped and sealed envelope?		
• Adaptability: Is the client able to change his/her way of life or behaviour in response to a change in his/her health, family, psychosocial state, or other?		
• Learning capacity: Is the client able to learn a short song, able to treat himself/herself (stoma, cutaneous blood-sugar test)		

How well does the client control himself/herself? (calm, withdrawn, loss of interest, angry)

Specify: _____

_____

_____

Does the client require monitoring in your opinion? Yes ☐ No ☐ Specify (duration, frequency, day, night, and so on.): _____

_____

_____

File No.: _____

7. HOUSING, LIFE SETTING, FINANCIAL RESOURCES

HOUSING AND LIFE SETTING

The home is located: ☐ in the basement ☐ on the first floor
☐ elsewhere Specify: _____

The home is accessible by: ☐ stairs ☐ elevator
☐ access ramp ☐ direct access

How many people share the home? _____

Indicate any access problems.

_____

_____

_____

_____

Does the client benefit from home accessibility programs, such as PAD and PARQ?
Yes ☐ No ☐ If no, specify: _____

_____

FINANCIAL RESOURCES:

☐ Client's approximate annual resources
☐ Resources of all those residing in the home
☐ Information obtained: ☐ from the client
☐ from income-tax returns
☐ from other sources. Specify: _____

$0-9,999 ☐ 15-19,999 ☐ 25-39,000
10-14,999 ☐ 20-24,999 ☐ 40,000 and over Specify the amount: _____

___ Old age pension	___ Registered retirement savings plan (RRSP)	___ Spouse's income
___ Guaranteed income supplement	___ American social security	___ UIC
___ Spouse's allowance	___ Veteran's benefits	___ Rent supplement
___ Quebec retirement plan (RRQ)	___ Special family allowance	___ Logirente
___ Spouse's RRQ	___ Income security (social assistance)	___ CSST/RAAQ compensation
		___ Direct allowance

___ Other sources of income (specify): _____

_____

_____

Does the client manage his/her own budget? ☐ Yes ☐ No

Assistance, if required, is provided by (state name and title): _____

File No.: _____

RESOURCES USED

Resources	Existing		Used		Explain if not used. If used, specify the type and frequency of service.	Hours per week
	Yes	No	Yes	No		
Family						
Friends or neighbours						
Community resources						
• Meals on wheels						
• Volunteer group						
• Social clubs						
• Other: friendly visits, telephone calls...						
Network resources (MSSS)						
Day centre						
• Day hospital						
• CLSC						
• Hospital						
• Rehabilitation centre						
Other resources						
• Educational services (specialized schools)						
• Medical follow-up (name of physician)						
• Heavy housework						
• Other (e.g., Argus, OPHQ, handicapped transportation...)						

File No.: _____

EMOTIONAL AND RELATIONAL STATE

fly describe the social and family situation (family members, occupation...)

ere an ongoing crisis situation due to a particular event, such as a death, abuse, violence, or a change in lifestyle?
es ☐ no
is, describe situation and specify need :

il the capacity for adaptation, both short- and long-term, with respect to the current crisis.

e client satisfied with his/her current living situation (loneliness, insecurity, anxiety...)? ☐ Yes ☐ No
ify:

the client experience difficulties in interpersonal relationships (relations with others, resolving emotional and social conflicts...)?
Yes ☐ No If yes, specify the assistance required :

ate if the natural network appears limited or reaching its limits in meeting the current need.

pertinent psychosocial information (self development, illiteracy, self-esteem...)

File No.: _____

10. EVALUATION REVIEW AND RECOMMENDATIONS

Psychosocial problems:

Client (and natural network's) expectations:

Action taken and results:

Evaluator's recommendations and comments on the services to be provided (specify the type of intervention required, the time, frequency, and duration, such as for assistance, care, psychosocial intervention, teaching, rehabilitation, foster home...):

For direct allowances, indicate the travelling time (if any) required for the resource: _____

Reevaluation anticipated on: _____

Evaluator and title: _____ Date: _____

Evaluator and title: _____ Date: _____

N.B.: Attach all documents that could complete the information relating to this application for services (nursing care, home care, psychosocial, rehabilitation...)

File No.: _____

AUTHORIZATION TO REVEAL INFORMATION

* May be replaced by the form normally used by the institution.

the undersigned _____, hereby authorize

_____(institution's name) to communicate to _____

formation relating to my application for home-maintenance services contained in my file.

_____

ignature of the client or the client's legal representative

_____

itness

_____

File No.: _____

APPENDIX 1

Note that a deficiency evaluation report is required to study this application when made for a person with an intellectual handicap.

Type of deficiency: _____ Date of appearance: _____

1. SITUATION

Functional autonomy: Specify the assistance required weighted according to age (e.g., diet, voiding, hygiene, transfers, walking, muscle tone...)

_____
_____
_____
_____
_____
_____

Intellectual aptitudes and behaviour: Specify the problem (learning capacity, judgement, requires monitoring, stimulation, hyperactivity, runaway...)

_____
_____
_____
_____
_____
_____

Family situation: Indicate any particular difficulties, such as signs of exhaustion, breakdown of the family/couple, single parent, absence or lack of involvement of the other spouse, number of young children.

_____
_____
_____
_____
_____

Accessibility to resources: Indicate any action and the results thereof, such as participation in learning, school, or rehabilitation activities, giving the location, number of days, and family involvement (brothers, sisters, etc.) If not used, state why.

_____
_____
_____
_____
_____

File No.: _____

Income: Indicate the approximate annual income for persons living in the same home (client and those responsible for him/her):

_____

Other pertinent information (placement under serious consideration, other pathologies, person assisting is very limited or handicapped, other respite measures, inaccessibility at home)

_____
_____
_____
_____

2. Application Status

Emergency care (the handicapped individual's needs are rapidly assumed under unusual circumstances that, in most cases, are sudden and unforeseeable.

Means: Arrange a service agreement with the person in charge of the program

_____
_____

Respite (a period of family rest and renewal to compensate for the added fatigue and stress brought on by the handicapped person's specific needs)

Means: Specify the number of days, hours, frequency, duration, approximate cost, and so on.

_____
_____

Caretaking (temporary replacement of the usual care giver to avoid a disruption in the normal routine)

Means: List the pertinent activities, specify the number of hours, frequency, duration, approximate cost, and so on.

_____
_____

Support of parental roles (service that is needed to meet specific requirements, such as a visually handicapped parent who cannot supervise his/her children's homework)

Means: Specify the need, the number of hours, frequency, duration, approximate cost, and so on.

_____
_____

Evaluator's recommendation

_____
_____
_____
_____
_____
_____

_____ _____

Evaluator's name and title Date

APPENDIX C

LETTERS OF APPROVAL

PROPOSITION D'ENTENTE ENTRE
LE CLSC ALFRED-DESROCHERS
ET
DIANE MORIN, ÉTUDIANTE AU DOCTORAT EN SANTÉ PUBLIQUE
LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

Le Centre Local de Services Communautaires Alfred-DesRochers, territoire de la Régie Régionale de la Santé et des Services Sociaux de -Estrie (ci-après appelée "Région-Estrie") et Diane Morin, étudiante au doctorat en santé publique, désireux de conclure une entente concernant un projet de recherche intitulé "*Étude comparative de trois outils d'évaluation à l'admission au maintien à domicile: impact sur la qualité de vie, sur les plans de service et sur l'utilisation des services de santé par les personnes âgées de 65 ans et plus*", conviennent de ce qui suit.

L'ENTENTE

1. Le présent protocole d'entente concerne **les ententes sur les participations des partenaires au projet de recherche**. Il vise à établir les rôles et responsabilités des partenaires à l'intérieur du projet de recherche (appelé ci-après "Projet"); incluant les responsabilités d'ordre budgétaire.

LE PROJET

2. Les outils d'évaluation multidimensionnelle utilisés pour les personnes âgées de 65 ans et plus à l'admission aux soins à domicile sont devenus courants. Lorsqu'ils répondent à certains critères liés aux dimensions qu'ils abordent et lorsqu'ils sont la base du développement d'un plan de service, d'un plan d'intervention ou/et d'un plan de soin, la littérature démontre sans équivoque qu'ils sont associés à des gains significatifs pour les âgés. Les principaux gains sont des **améliorations** au niveau (i) du statut fonctionnel, (ii) du statut cognitif et (iii) de la survie; des impacts ont également ont été significativement associés à des **diminutions** dans (iv) l'utilisation des services hospitaliers, (v) les placements en centre d'accueil et d'hébergement, (vi) l'utilisation de soins médicaux et (vii) l'utilisation de médicaments prescrits. Finalement, des **associations** probables à une meilleure qualité de vie et à une plus grande satisfaction avec les soins et services sont non démontrées mais à l'étude présentement. Tous ces résultats sont particulièrement vrais dans les contextes d'unité gériatrique active et dans celui des soins à domicile. Trois outils d'évaluation, dont le CTMSP, le SMAF et l'outil de -Estrie basé sur le CTMSP utilisés dans le cadre du programme Maintien à domicile des CLSC du Québec ont été déjà évalués pour leur globalité et leur utilité. Ils sont compatibles avec les définitions d'outils d'évaluation multidimensionnelle et concordent avec les recommandations de la littérature pour utilisation auprès de clientèles âgées. Ils s'adressent à des clientèles semblables et dans un souci d'efficacité, certains des impacts auxquels ils contribuent tels la qualité de vie et l'utilisation des services de santé par les personnes admises au programme de maintien à domicile pour des services long terme gagneraient à être

comparés. Cela pourrait procurer des informations susceptibles de contribuer à l'évaluation de leur efficacité et possiblement permettre de meilleures prises de décision quant à leur expansion vers d'autres Régions.

Le projet vise à analyser la présence d'associations entre l'utilisation de ces outils et les résultats attendus auprès des populations chez qui ils sont utilisés. Il vise également à comparer les plans de service (d'intervention et/ou de soins) issus des différentes évaluations.

Le projet de recherche comporte quatre objectifs opérationnels. La participation active du CLSC Alfred-DesRochers est requise dans les trois premiers:

2.1 **Objectif 1**: Identifier les personnes pouvant être incluses dans l'étude

Activités	**Personnes impliquées**	**Outil/temps requis**
1. Formation des professionnel-les sur étude et outils de collecte.	D.Morin et les professionnel-les	1 heure

2.2 **Objectif 2**: Recueillir les caractéristiques à l'entrée au programme

Activités	**Responsable**	**Outil/temps requis**
1. Suite aux procédures habituelles d'admission, déterminer l'éligibilité pour inclusion.	Professionnel-les	Quelques minutes Critères Annexe A
2. Expliquer l'étude à la personne admissible et demander participation par consentement écrit.	Professionnel-les	Dix minutes Consentement Annexe B
3. Remplir le questionnaire avec la personne.	Professionnel-les	Vingt minutes Questionnaire Annexe C
4. Retourner le questionnaire.	Professionnel-les	Quelques minutes Enveloppe pré-adressée

2.3 **Objectif 3**: Recueillir les caractéristiques de résultat à 12 semaines

Activités	**Responsable**	**Outil/temps requis**
1. Remplir le questionnaire avec la personne.	Professionnel-les	Vingt minutes Questionnaire Annexe D
2. Retourner le questionnaire.	Professionnel-les	Quelques minutes Enveloppe pré-adressée

2.4 **Objectif 4:** Recueillir les caractéristiques du plan de service

Activités	Responsable	Outil/temps requis
1. Choix aléatoire	D.Morin	Local confidentiel
2. Analyse des plans de service.	D.Morin	

2.5 L'échéancier idéal de l'étude se situe entre janvier et décembre 1995. Les formations se tiendraient en janvier et février 1995. Les collectes de données à l'admission se tiendraient entre février et novembre 1995 et subséquemment, les collectes de données pour les entrevues à 12 semaines se tiendront de juin à août 1995. C'est également durant cette dernière période que se tiendra l'analyse des plans de service.

LES RESPONSABILITÉS

3. **La chercheure principale,** étudiante au doctorat en santé publique est la personne qui assurera la coordination du projet.

3.1 Elle sera responsable du suivi, de la surveillance des étapes du projet et du règlement de tout problème concernant la recherche, survenant et pouvant être réglé aux niveaux techniques et opérationnels.

3.2 Elle s'engage à former le personnel des CLSC qui participera au projet, à fournir le matériel d'enquête, à faire le suivi et à apporter le support nécessaire aux différentes étapes de collecte de données par le biais de conseil, support et visites de suivi au besoin.

3.3 Elle s'engage à défrayer une partie des coûts inhérents à la tenue des d'admission tel qu'évalué à l'Annexe E; soit une somme de $2,500.00 pour l'ensemble des huit CLSC de la Région-Estrie. Cette somme basée sur une hypothèse de 30 sujets pas CLSC sera considérée comme forfaitaire. Elle sera versée d'ici la fin 1995 à l'un des CLSC qui fera par la suite les ajustements avec les autres CLSC selon les modalités convenues entre eux.

3.4 Elle s'engage à faire, auprès des organismes subventionnaires du niveau régional, provincial ou fédéral les demandes de financement jugées nécessaires au bon déroulement de l'étude. Elle s'engage à informer le CLSC Alfred-

DesRochers de même que les autres CLSC de la Région--Estrie de toute demande de financement et à solliciter leur accord.

3.5 Elle s'engage, dans le cas où aucun financement n'était octroyé par les organismes subventionnaires, à défrayer la moitié des coûts inhérents à la tenue des entrevues à 12 semaines tel qu'évalué à l'Annexe E; soit une somme additionnelle de $825.00 pour l'ensemble des huit CLSC participant. Cette somme sera versée au plus tard en septembre 1996 à l'un des CLSC qui fera par la suite les ajustements avec les autres CLSC selon les modalités convenues entre eux. Tel que stipulé au point 3.3 cette somme, quoique basée sur une hypothèse budgétaire est considérée forfaitaire.

3.6 Elle s'engage à défrayer tous les coûts d'envoi postal, de reprographie et de communications effectués dans le cadre du projet de recherche.

3.7 Elle s'engage à inclure le matériel nécessaire pour obtenir un consentement éclairé de toutes les personnes admises à l'étude, suite à des explications complètes incluses en Annexe B. Ce consentement devra être confirmé par écrit et stipulera que la personne accepte de répondre à deux questionnaires et que les informations soient utilisées pour fin de comparaisons. Dans le cas où le choix au hasard désignerait la personne pour le sous-échantillon, elle acceptera également qu'une troisième entrevue puisse être sollicitée et que son dossier tenu au CLSC puisse être consulté de façon confidentielle pendant la durée de l'étude soit une période de neuf mois.

3.8 Elle s'engage à discuter des résultats de la recherche avec les CLSC participant avant leur diffusion sous forme de thèse, d'article ou sous toute autre forme publique.

3.9 Diane Morin pourra être rejointe en tous temps aux coordonnées suivantes:

a/s École des Sciences Infirmières
Pavillon Paul-Comtois
Cité universitaire
Université Laval
Québec (Qc)
G1K 7P4

Tél: 418-656-3958 bur.
Tél: 418-525-9107 dom.
Fax: 418-656-7747
Internet: diane.morin@esi.ulaval.ca
d.morin@lshtm.ac.uk

3.10 La directrice scientifique des travaux de doctorat de Diane Morin est:

Dr Donna L. Lamping
Professeure agrégée

Elle peut être rejointe aux coordonnées suivantes:

Health Services Research Unit
Department of Public Health and Policy
London School of Hygiene and Tropical Medicine
Keppel Street
Londres WC1E 7HT
Royaume Uni

Tél: 011-44-71-927-2380
011-44-71-636-8636
Fax: 011-44-71-436-3611
Internet: d.lamping@lshtm.ac.uk

4. **Le CLSC Alfred-DesRochers de la Région--Estrie** accepte de participer à l'étude en permettant au personnel exerçant des tâches liées à l'admission de personnes au programme maintien à domicile de participer à la formation et de contribuer à la collecte de données à l'admission et à 12 semaines de l'admission. Les collectes de données porteront sur des indicateurs de qualité de vie et d'utilisation des services.

4.1 Le CLSC Alfred-DesRochers s'engage à supporter les coûts inhérents à la formation de base des personnels de santé susceptibles d'être impliqués dans la sélection des personnes et dans l'utilisation des outils de mesure de qualité de vie à l'admission et lors d'une entrevue après 12 semaines de l'admission.

4.2 Dans le cas où malgré les demandes effectuées, aucun financement externe n'était alloué par les organismes subventionnaires sollicités, le CLSC s'engage au moins à supporter la moitié des coûts inhérents à la deuxième mesure de qualité de vie et d'utilisation des services d'une entrevue après 12 semaines de l'admission.

4.3 Le CLSC s'engage à contribuer à la recherche de financement par le biais de la diffusion de la présente entente auprès des organismes subventionnaires de niveau régional, provincial ou fédéral.

4.4 Le but du projet étant de mesurer la présence d'associations entre certains résultats auprès de population et les pratiques d'admission, le CLSC s'engage à permettre à la chercheure de recueillir l'information nécessaire à ses travaux dans les locaux du CLSC aux conditions suivantes. La chercheure devra avoir obtenu les autorisations nécessaires auprès des personnes incluses à l'étude. Elle devra avoir sollicité les autorisations auprès de la Direction Générale de l'institution selon les modalités en vigueur. Le consentement de même que les étapes touchant les autorisations devront faire l'objet d'agrément avant le début de l'étude. Il est entendu qu'aucun document ne pourra être consulté en dehors des locaux des CLSC. Un espace de travail permettant la préservation du caractère confidentiel des informations à recueillir lui sera fourni en temps et lieu. Une demande d'autorisation est incluse à l'Annexe F.

4.5 Le coordonnateur responsable et son adjointe au programme maintien à domicile pour le CLSC sera le partenaire opérationnel au projet. Ses coordonnées sont les suivantes:

CLSC ALFRED-DESROCHERS
Maurice Rancourt
1750, Sherbrooke, Magog, J1X 2T3
Tél: 819-843-2572 Fax: 819-843-2940

4.6 Cette entente pourra être résiliée dans le cas où des conditions critiques liées à l'adhésion d'autres CLSC des autres RR3S entravaient de façon irrémédiable la poursuite de la recherche telle qu'elle est définie dans ce protocole. A ce moment-là, tous autres arrangements devraient faire l'objet de signature d'un nouveau protocole d'entente.

En foi de quoi, les soussignés ont convenu de la présente entente, le 15 janvier 1995.

Maurice Rancourt
CLSC Alfred-DesRochers

Diane Morin, Chercheure principale
Étudiante au doctorat

PROPOSITION D'ENTENTE ENTRE
LE CLSC SAINT-HENRI
ET
DIANE MORIN, ÉTUDIANTE AU DOCTORAT EN SANTÉ PUBLIQUE
LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

Le Centre Local de Services Communautaires Saint-Henri, territoire de la Régie Régionale de la Santé et des Services Sociaux de Montréal-Centre (ci-après appelée "RR3S-MC") et Diane Morin, étudiante au doctorat en santé publique, désireux de conclure une entente concernant un projet de recherche intitulé "*Étude comparative de trois outils d'évaluation à l'admission au maintien à domicile: impact sur la qualité de vie, sur les plans de service et sur l'utilisation des services de santé par les personnes âgées de 65 ans et plus*", conviennent de ce qui suit.

L'ENTENTE

1. Le présent protocole d'entente concerne **les ententes sur les participations des partenaires au projet de recherche**. Il vise à établir les rôles et responsabilités des partenaires à l'intérieur du projet de recherche (appelé ci-après "Projet"); incluant les responsabilités d'ordre budgétaire.

LE PROJET

2. Les outils d'évaluation multidimensionnelle utilisés pour les personnes âgées de 65 ans et plus à l'admission aux soins à domicile sont devenus courants. Lorsqu'ils répondent à certains critères liés aux dimensions qu'ils abordent et lorsqu'ils sont la base du développement d'un plan de service, d'un plan d'intervention ou/et d'un plan de soin, la littérature démontre sans équivoque qu'ils sont associés à des gains significatifs pour les âgés. Les principaux gains sont des **améliorations** au niveau (i) du statut fonctionnel, (ii) du statut cognitif et (iii) de la survie; des impacts ont également ont été significativement associés à des **diminutions** dans (iv) l'utilisation des services hospitaliers, (v) les placements en centre d'accueil et d'hébergement, (vi) l'utilisation de soins médicaux et (vii) l'utilisation de médicaments prescrits. Finalement, des **associations** probables à une meilleure qualité de vie et à une plus grande satisfaction avec les soins et services sont non démontrées mais à l'étude présentement. Tous ces résultats sont particulièrement vrais dans les contextes d'unité gériatrique active et dans celui des soins à domicile. Trois outils d'évaluation, dont le CTMSP, le SMAF et l'outil de la RR3S-Estrie basé sur le CTMSP utilisés dans le cadre du programme Maintien à domicile des CLSC du Québec ont été déjà évalués pour leur globalité et leur utilité. Ils sont compatibles avec les définitions d'outils d'évaluation multidimensionnelle et concordent avec les recommandations de la littérature pour utilisation auprès de clientèles âgées. Ils s'adressent à des clientèles semblables et dans un souci d'efficacité, certains des impacts auxquels ils contribuent tels la qualité de vie et l'utilisation des services de santé par les personnes admises au programme de maintien à domicile pour des services long terme gagneraient à être

comparés. Cela pourrait procurer des informations susceptibles de contribuer à l'évaluation de leur efficacité et possiblement permettre de meilleures prises de décision quant à leur expansion vers d'autres Régions.

Le projet vise à analyser la présence d'associations entre l'utilisation de ces outils et les résultats attendus auprès des populations chez qui ils sont utilisés. Il vise également à comparer les plans de service (d'intervention et/ou de soins) issus des différentes évaluations.

Le projet de recherche comporte quatre objectifs opérationnels. La participation active du CLSC Saint-Henri est requise dans les trois premiers:

2.1 **Objectif 1:** Identifier les personnes pouvant être incluses dans l'étude

Activités	**Personnes impliquées**	**Outil/temps requis**
1. Formation des professionnel-les sur étude et outils de collecte.	D.Morin et professionels du programme	1 heure

2.2 **Objectif 2:** Recueillir les caractéristiques à l'entrée au programme

Activités	**Responsable**	**Outil/temps requis**
1. Suite aux procédures habituelles d'admission, déterminer l'éligibilité pour inclusion.	Professionnels du programme	Quelques minutes Critères Annexe A
2. Expliquer l'étude à la personne admissible et demander participation par consentement écrit.	Professionnels du programme	Dix minutes Consentement Annexe B
3. Remplir le questionnaire avec la personne.	Professionnels du programme	Vingt minutes Questionnaire Annexe C
4. Retourner le questionnaire.	Professionnels du programme	Quelques minutes Enveloppe pré-adressée

2.3 **Objectif 3:** Recueillir les caractéristiques de résultat à 12 semaines

Activités	**Responsable**	**Outil/temps requis**
1. Remplir le questionnaire avec la personne.	Professionnels du programme	Vingt minutes Questionnaire Annexe D
2. Retourner le questionnaire.	Professionnels du programme	Quelques minutes Enveloppe pré-adressée

2.4 **Objectif 4:** Recueillir les caractéristiques du plan de service

Activités	**Responsable**	**Outil/temps requis**
1. Choix aléatoire	D.Morin	Local confidentiel
2. Analyse des plans de service.	D.Morin	

2.5 L'échéancier idéal de l'étude se situe entre avril et décembre 1995. La formation de la professionnelle du programme qui serait en charge de tenir les entrevues se tiendrait en mars 1995. Les collectes de données à l'admission se tiendraient entre avril et septembre 1995 et subséquemment, les collectes de données pour les entrevues à 12 semaines se tiendront de juillet à décembre 1995. C'est également durant cette dernière période que se tiendra l'analyse des plans de service par la chercheure principale.

LES RESPONSABILITÉS

3. **La chercheure principale**, étudiante au doctorat en santé publique est la personne qui assurera la coordination du projet.

3.1 Elle sera responsable du suivi, de la surveillance des étapes du projet et du règlement de tout problème concernant la recherche, survenant et pouvant être réglé aux niveaux techniques et opérationnels.

3.2 Elle s'engage à former les professionnelles et professionnels du CLSC qui participeront au projet à titre d'enquêtrice, à fournir le matériel d'enquête, à faire le suivi et à apporter le support nécessaire aux différentes étapes de collecte de données par le biais de conseil, support et visites de suivi au besoin.

3.3 Elle s'engage à faire, auprès des organismes subventionnaires du niveau régional, provincial ou fédéral les demandes de financement jugées nécessaires au bon déroulement de l'étude. Elle s'engage à informer le CLSC Saint-Henri de même que les autres CLSC de la RR3S-MC de toute demande de financement et à solliciter leur accord.

3.4 Dans le cas de refus des organismes subventionnaires, elle s'engage à défrayer les coûts inhérents à la tenue des entrevues à l'admission et des entrevues à 12 semaines de l'admission. Cette contribution pour l'entrevue à l'admission

équivaudrait à $18.00 et à $10.00 pour l'entrevue à 12 semaines soit un total de $28.00 par personne admise à l'étude.

3.5 Dans le cas d'acceptation par des organismes subventionnaires, elle s'engage à défrayer les coûts inhérents à la tenue des entrevues à l'admission et à 12 semaines à $24.24/heure par patient admis à l'étude (base de calcul de 40,000$/an).

3.6 Elle s'engage à défrayer tous les coûts d'envoi postal, de reprographie et de communications effectués dans le cadre du projet de recherche.

3.7 Elle s'engage à inclure le matériel nécessaire pour obtenir un consentement éclairé de toutes les personnes admises à l'étude, suite à des explications complètes incluses en Annexe B. Ce consentement devra être confirmé par écrit et stipulera que la personne accepte de répondre à deux questionnaires et que les informations soient utilisées pour fin de comparaisons. Dans le cas où le choix au hasard désignerait la personne pour le sous-échantillon, elle acceptera également qu'une troisième entrevue puisse être sollicitée et que son dossier tenu au CLSC puisse être consulté de façon confidentielle pendant la durée de l'étude soit une période de neuf mois.

3.8 Elle s'engage à discuter des résultats de la recherche avec les CLSC participant avant leur diffusion sous forme de thèse, d'article ou sous toute autre forme publique.

3.9 Diane Morin pourra être rejointe en tous temps aux coordonnées suivantes:

a/s École des Sciences Infirmières
Pavillon Paul-Comtois
Cité universitaire
Université Laval
Québec (Qc)
G1K 7P4

Tél: 418-656-3958 bur.
Tél: 418-525-9107 dom.
Fax: 418-656-7747
Internet: diane.morin@esi.ulaval.ca
d.morin@lshtm.ac.uk

3.10 La directrice scientifique des travaux de doctorat de Diane Morin est:
Dr Donna L. Lamping
Professeure agrégée

Elle peut être rejointe aux coordonnées suivantes:
Health Services Research Unit
Department of Public Health and Policy
London School of Hygiene and Tropical Medicine
Keppel Street
Londres WC1E 7HT
Royaume Uni
Tél: 011-44-71-927-2380
011-44-71-636-8636
Fax: 011-44-71-436-3611
Internet: d.lamping@lshtm.ac.uk

4. **Le CLSC Saint-Henri de la RR3S-MC** accepte de participer à l'étude en permettant aux professionnelles et professionnels de l'équipe Maintien à domicile de participer à la formation et de contribuer à la collecte de données à l'admission et à 12 semaines de l'admission pour les personnes admises au programme de maintien à domicile. Le CLSC s'engage à facturer les montants liés aux entrevues en fonction des critères établis aux points 3.4 ou 3.5.

4.1 Le CLSC s'engage à supporter les coûts inhérents à la formation de base de la professionnelle.

4.2 Le CLSC s'engage à contribuer à la recherche de financement par le biais de la diffusion de la présente entente auprès des organismes subventionnaires de niveau régional, provincial ou fédéral.

4.3 Le but du projet étant de mesurer la présence d'associations entre certains résultats auprès de population et les pratiques d'admission, le CLSC s'engage à permettre à la chercheure de recueillir l'information nécessaire à ses travaux dans les locaux du CLSC aux conditions suivantes. La chercheure devra avoir obtenu les autorisations nécessaires auprès des personnes incluses à l'étude. Elle devra avoir sollicité les autorisations auprès de la Direction Générale de l'institution selon les modalités en vigueur. Le consentement de même que les étapes touchant les autorisations devront faire l'objet d'agrément avant le début de l'étude. Il est entendu qu'aucun document ne pourra être consulté en dehors des locaux des CLSC. Un espace de travail permettant la préservation

du caractère confidentiel des informations à recueillir lui sera fourni en temps et lieu. Une demande d'autorisation est incluse à l'Annexe F de mème qu'un engagement à préserver le caractère confidentiel des informations receuillies.

4.4 La coordonnatrice responsable du programme maintien à domicile pour le CLSC sera la partenaire opérationnelle au projet. Ses coordonnées sont les suivantes:

CLSC Saint-Henri
Nicole Goupil
3833, Notre-Dame Ouest
Montréal H4C 1P8

4.5 Cette entente pourra être résiliée dans le cas où des conditions critiques liées à l'adhésion d'autres CLSC des autres RR3S entravaient de façon irrémédiable la poursuite de la recherche telle qu'elle est définie dans ce protocole. A ce moment-là, tous autres arrangements devraient faire l'objet de signature d'un nouveau protocole d'entente.

En foi de quoi, les soussignés ont convenu de la présente entente, le ....20 mars 1995.

Nicole Goupil
CLSC Saint-Henri

Diane Morin
Étudiante au doctorat

PROPOSITION D'ENTENTE ENTRE
LE CLSC RENÉ-CASSIN
ET
DIANE MORIN, ÉTUDIANTE AU DOCTORAT EN SANTÉ PUBLIQUE
LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

Le Centre Local de Services Communautaires René-Cassin, territoire de la Régie Régionale de la Santé et des Services Sociaux de Montréal-Centre (ci-après appelée "RR3S-Montréal-Centre") et Diane Morin, étudiante au doctorat en santé publique, désireux de conclure une entente concernant un projet de recherche intitulé "*Étude comparative de trois outils d'évaluation à l'admission au maintien à domicile: impact sur la qualité de vie, sur les plans de service et sur l'utilisation des services de santé par les personnes âgées de 65 ans et plus*", conviennent de ce qui suit.

L'ENTENTE

1. Le présent protocole d'entente concerne **les ententes sur les participations des partenaires au projet de recherche.** Il vise à établir les rôles et responsabilités des partenaires à l'intérieur du projet de recherche (appelé ci-après "Projet"); incluant les responsabilités d'ordre budgétaire.

LE PROJET

2. Les outils d'évaluation multidimensionnelle utilisés pour les personnes âgées de 65 ans et plus à l'admission aux soins à domicile sont devenus courants. Lorsqu'ils répondent à certains critères liés aux dimensions qu'ils abordent et lorsqu'ils sont la base du développement d'un plan de service, d'un plan d'intervention ou/et d'un plan de soin, la littérature démontre sans équivoque qu'ils sont associés à des gains significatifs pour les âgés. Les principaux gains sont des **améliorations** au niveau (i) du statut fonctionnel, (ii) du statut cognitif et (iii) de la survie; des impacts ont également ont été significativement associés à des **diminutions** dans (iv) l'utilisation des services hospitaliers, (v) les placements en centre d'accueil et d'hébergement, (vi) l'utilisation de soins médicaux et (vii) l'utilisation de médicaments prescrits. Finalement, des **associations** probables à une meilleure qualité de vie et à une plus grande satisfaction avec les soins et services sont non démontrées mais à l'étude présentement. Tous ces résultats sont particulièrement vrais dans les contextes d'unité gériatrique active et dans celui des soins à domicile. Trois outils d'évaluation, dont le CTMSP, l'Évaluation multiclientèle et l'outil de l'Estrie basé sur le CTMSP utilisés dans le cadre du programme Maintien à domicile des CLSC du Québec ont été déjà évalués pour leur globalité et leur utilité. Ils sont compatibles avec les définitions d'outils d'évaluation multidimensionnelle et concordent avec les recommandations de la littérature pour utilisation auprès de clientèles âgées. Ils s'adressent à des clientèles semblables et dans un souci d'efficacité, certains des impacts auxquels ils contribuent tels la qualité de vie et l'utilisation des services de santé par les personnes admises au programme de maintien à domicile pour des services long terme

gagneraient à être comparés. Cela pourrait procurer des informations susceptibles de contribuer à l'évaluation de leur efficacité et possiblement permettre de meilleures prises de décision quant à leur expansion vers d'autres RR3S.

Le projet vise à analyser la présence d'associations entre l'utilisation de ces outils et les résultats attendus auprès des populations chez qui ils sont utilisés. Il vise également à comparer les plans de service (d'intervention et/ou de soins) issus des différentes évaluations.

Le projet de recherche comporte quatre objectifs opérationnels. La participation active du CLSC René-Cassin est requise dans les trois premiers:

2.1 Objectif 1: Identifier les personnes pouvant être incluses dans l'étude

Activités	Personnes impliquées	Outil/temps requis
1. Formation des professionnel-les sur étude et outils de collecte.	D.Morin et les professionnel-les	1 heure

2.2 Objectif 2: Recueillir les caractéristiques à l'entrée au programme

Activités	Responsable	Outil/temps requis
1. Suite aux procédures habituelles d'admission, déterminer l'éligibilité pour inclusion.	Professionnel-les	Quelques minutes Critères Annexe A
2. Expliquer l'étude à la personne admissible et demander participation par consentement écrit.	Professionnel-les	Dix minutes Consentement Annexe B
3. Remplir le questionnaire avec la personne.	Professionnel-les	Vingt minutes Questionnaire Annexe C
4. Retourner le questionnaire.	Professionnel-les	Quelques minutes Enveloppe pré-adressée

2.3 Objectif 3: Recueillir les caractéristiques de résultat à 12 semaines

Activités	Responsable	Outil/temps requis
1. Remplir le questionnaire avec la personne.	Professionnel-les	Vingt minutes Questionnaire Annexe D
2. Retourner le questionnaire.	Professionnel-les	Quelques minutes Enveloppe pré-adressée

2.4 Objectif 4: Recueillir les caractéristiques du plan de service

Activités	Responsable	Outil/temps requis
1. Choix aléatoire	D.Morin	Local confidentiel
2. Analyse des plans de service.	D.Morin	

2.5 L'échéancier idéal de l'étude se situe entre janvier et décembre 1995. Les formations se tiendraient en janvier et février 1995. Les collectes de données à l'admission se tiendraient entre février et mai 1995 et subséquemment, les collectes de données pour les entrevues à 12 semaines se tiendront de juin à août 1995. C'est également durant cette dernière période que se tiendra l'analyse des plans de service.

LES RESPONSABILITÉS

3. **La chercheure principale**, étudiante au doctorat en santé publique est la personne qui assurera la coordination du projet.

3.1 Elle sera responsable du suivi, de la surveillance des étapes du projet et du règlement de tout problème concernant la recherche, survenant et pouvant être réglé aux niveaux techniques et opérationnels.

3.2 Elle s'engage à former le personnel des CLSC qui participera au projet, à fournir le matériel d'enquête, à faire le suivi et à apporter le support nécessaire aux différentes étapes de collecte de données par le biais de conseil, support et visites de suivi au besoin.

3.3 Elle s'engage à défrayer une partie des coûts inhérents à la tenue des entrevues d'admission si le CLSC en fait la demande. Cette contribution équivaudrait à $18.00 par patient admis à l'étude. La base de calcul est incluse en annexe E.

3.4 Elle s'engage à faire, auprès des organismes subventionnaires du niveau régional, provincial ou fédéral les demandes de financement jugées nécessaires au bon déroulement de l'étude. Elle s'engage à informer le CLSC René-Cassin de même que les autres CLSC de la RR3S-Montréal-Centre de toute demande de financement et à solliciter leur accord.

3.5 Elle s'engage, dans le cas où aucun financement n'était octroyé par les organismes subventionnaires, à défrayer une partie des coûts de la deuxième entrevue soit une somme de $10.00 par patient admis à l'étude. La base de calcul est incluse en annexe.

3.6 Elle s'engage à défrayer tous les coûts d'envoi postal, de reprographie et de communications effectués dans le cadre du projet de recherche.

3.7 Elle s'engage à inclure le matériel nécessaire pour obtenir un consentement éclairé de toutes les personnes admises à l'étude, suite à des explications complètes incluses en Annexe B. Ce consentement devra être confirmé par écrit et stipulera que la personne accepte de répondre à deux questionnaires et que les informations soient utilisées pour fin de comparaisons. Dans le cas où le choix au hasard désignerait la personne pour le sous-échantillon, elle acceptera également qu'une troisième entrevue puisse être sollicitée et que son dossier tenu au CLSC puisse être consulté de façon confidentielle pendant la durée de l'étude soit une période de neuf mois.

3.8 Elle s'engage à discuter des résultats de la recherche avec les CLSC participant avant leur diffusion sous forme de thèse, d'article ou sous toute autre forme publique.

3.9 Diane Morin pourra être rejointe en tous temps aux coordonnées suivantes:

a/s École des Sciences Infirmières
Pavillon Paul-Comtois
Cité universitaire
Université Laval
Québec (Qc)
G1K 7P4

Tél: 418-656-3958 bur.
Tél: 418-525-9107 dom.
Fax: 418-656-7747
Internet: diane.morin@esi.ulaval.ca
d.morin@lshtm.ac.uk

3.10 La directrice scientifique des travaux de doctorat de Diane Morin est:
Dr Donna L. Lamping
Professeure agrégée

Elle peut être rejointe aux coordonnées suivantes:
Health Services Research Unit
Department of Public Health and Policy
London School of Hygiene and Tropical Medicine
Keppel Street
Londres WC1E 7HT
Royaume Uni
Tél: 011-44-71-927-2380
011-44-71-636-8636
Fax: 011-44-71-436-3611
Internet: d.lamping@lshtm.ac.uk

4. **Le CLSC René-Cassin de la RR3S-Montréal-Centre** accepte de participer à l'étude en permettant au personnel exerçant des tâches liées à l'admission de personnes au programme maintien à domicile de participer à la formation et de contribuer à la collecte de données à l'admission et à 12 semaines de l'admission. Les collectes de données porteront sur des indicateurs de qualité de vie et d'utilisation des services.

4.1 Le CLSC René-Cassin s'engage à supporter les coûts inhérents à la formation de base des personnels de santé susceptibles d'être impliqués dans la sélection des personnes et dans l'utilisation des outils de mesure de qualité de vie à l'admission et lors d'une entrevue après 12 semaines de l'admission.

4.2 Dans le cas où malgré les demandes effectuées, aucun financement externe n'était alloué par les organismes subventionnaires sollicités, étant donné que la somme de $28.00/personne admise à l'étude ne correspond pas au coût réel en terme de temps/personne, le CLSC s'engage à supporter la partie excédentaire des coûts inhérents aux entrevues (une base de calcul est en Annexe E.

4.3 Le CLSC s'engage à contribuer à la recherche de financement par le biais de la diffusion de la présente entente auprès des organismes subventionnaires de niveau régional, provincial ou fédéral.

4.4 Le but du projet étant de mesurer la présence d'associations entre certains résultats auprès de population et les pratiques d'admission, le CLSC s'engage à permettre à la chercheure de recueillir l'information nécessaire à ses travaux dans les locaux du CLSC aux conditions suivantes. La chercheure devra avoir obtenu les autorisations nécessaires auprès des personnes incluses à l'étude. Elle devra avoir sollicité les autorisations auprès de la Direction Générale de l'institution selon les modalités en vigueur. Le consentement de même que les étapes touchant les autorisations devront faire l'objet d'agrément avant le début de l'étude. Il est entendu qu'aucun document ne pourra être consulté en dehors des locaux des CLSC. Un espace de travail permettant la préservation du caractère confidentiel des informations à recueillir lui sera fourni en temps et lieu. Une demande d'autorisation est incluse à l'Annexe F.

4.5 Le coordonnateur responsable du programme maintien à domicile pour le CLSC sera le partenaire opérationnel au projet. Ses coordonnées sont les suivantes:

CLSC RENÉ-CASSIN
Marie Amzallag
4800, boul. Cavendish, Bureau 200, Côte Saint-Luc, Montréal, H4W 2T5
Tél: 514-488-9163

4.6 Cette entente pourra être résiliée dans le cas où des conditions critiques liées à l'adhésion d'autres CLSC des autres RR3S entravaient de façon irrémédiable la poursuite de la recherche telle qu'elle est définie dans ce protocole. A ce moment-là, tous autres arrangements devraient faire l'objet de signature d'un nouveau protocole d'entente.

En foi de quoi, les soussignés ont convenu de la présente entente, le 12 mai 1995.

CLSC René-Cassin

Diane Morin, Chercheure principale
Étudiante au doctorat

PROPOSITION D'ENTENTE ENTRE LE CLSC METRO ET DIANE MORIN, ÉTUDIANTE AU DOCTORAT EN SANTÉ PUBLIQUE LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

Le Centre Local de Services Communautaires Métro, territoire de la Régie Régionale de la Santé et des Services Sociaux de Montréal-Centre (ci-après appelée "Région-Montréal-Centre") et Diane Morin, étudiante au doctorat en santé publique, désireux de conclure une entente concernant un projet de recherche intitulé "*Étude comparative de trois outils d'évaluation à l'admission au maintien à domicile: impact sur la qualité de vie, sur les plans de service et sur l'utilisation des services de santé par les personnes âgées de 65 ans et plus*", conviennent de ce qui suit.

L'ENTENTE

1. Le présent protocole d'entente concerne **les ententes sur les participations des partenaires au projet de recherche**. Il vise à établir les rôles et responsabilités des partenaires à l'intérieur du projet de recherche (appelé ci-après "Projet"); incluant les responsabilités d'ordre budgétaire.

LE PROJET

2. Les outils d'évaluation multidimensionnelle utilisés pour les personnes âgées de 65 ans et plus à l'admission aux soins à domicile sont devenus courants. Lorsqu'ils répondent à certains critères liés aux dimensions qu'ils abordent et lorsqu'ils sont la base du développement d'un plan de service, d'un plan d'intervention ou/et d'un plan de soin, la littérature démontre sans équivoque qu'ils sont associés à des gains significatifs pour les âgés. Les principaux gains sont des **améliorations** au niveau (i) du statut fonctionnel, (ii) du statut cognitif et (iii) de la survie; des impacts ont également ont été significativement associés à des **diminutions** dans (iv) l'utilisation des services hospitaliers, (v) les placements en centre d'accueil et d'hébergement, (vi) l'utilisation de soins médicaux et (vii) l'utilisation de médicaments prescrits. Finalement, des **associations** probables à une meilleure qualité de vie et à une plus grande satisfaction avec les soins et services sont non démontrées mais à l'étude présentement. Tous ces résultats sont particulièrement vrais dans les contextes d'unité gériatrique active et dans celui des soins à domicile. Trois outils d'évaluation, dont le CTMSP, le SMAF et l'outil de Montréal-Centre basé sur le CTMSP utilisés dans le cadre du programme Maintien à domicile des CLSC du Québec ont été déjà évalués pour leur globalité et leur utilité. Ils sont compatibles avec les définitions d'outils d'évaluation multidimensionnelle et concordent avec les recommandations de la littérature pour utilisation auprès de clientèles âgées. Ils s'adressent à des clientèles semblables et dans un souci d'efficacité, certains des impacts auxquels ils contribuent tels la qualité de vie et l'utilisation des services de santé par les personnes admises au programme de maintien à domicile pour des services long terme

gagneraient à être comparés. Cela pourrait procurer des informations susceptibles de contribuer à l'évaluation de leur efficacité et possiblement permettre de meilleures prises de décision quant à leur expansion vers d'autres Régions.

Le projet vise à analyser la présence d'associations entre l'utilisation de ces outils et les résultats attendus auprès des populations chez qui ils sont utilisés. Il vise également à comparer les plans de service (d'intervention et/ou de soins) issus des différentes évaluations.

Le projet de recherche comporte quatre objectifs opérationnels. La participation active du CLSC Métro est requise dans les trois premiers:

2.1 Objectif 1: Identifier les personnes pouvant être incluses dans l'étude

Activités	Personnes impliquées	Outil/temps requis
1. Formation des professionnel-les sur étude et outils de collecte.	D.Morin et les professionnel-les	1 heure

2.2 Objectif 2: Recueillir les caractéristiques à l'entrée au programme

Activités	Responsable	Outil/temps requis
1. Suite aux procédures habituelles d'admission, déterminer l'éligibilité pour inclusion.	Professionnel-les	Quelques minutes Critères Annexe A
2. Expliquer l'étude à la personne admissible et demander participation par consentement écrit.	Professionnel-les	Dix minutes Consentement Annexe B
3. Remplir le questionnaire avec la personne.	Professionnel-les	Vingt minutes Questionnaire Annexe C
4. Retourner le questionnaire.	Professionnel-les	Quelques minutes Enveloppe pré-adressée

2.3 Objectif 3: Recueillir les caractéristiques de résultat à 12 semaines

Activités	Responsable	Outil/temps requis
1. Remplir le questionnaire avec la personne.	Professionnel-les	Vingt minutes Questionnaire Annexe D
2. Retourner le questionnaire.	Professionnel-les	Quelques minutes Enveloppe pré-adressée

2.4 **Objectif 4**: Recueillir les caractéristiques du plan de service

Activités	Responsable	Outil/temps requis
1. Choix aléatoire	D.Morin	Local confidentiel
2. Analyse des plans de service.	D.Morin	

2.5 L'échéancier idéal de l'étude se situe entre janvier et décembre 1995. Les formations se tiendraient en janvier et février 1995. Les collectes de données à l'admission se tiendraient entre février et mai 1995 et subséquemment, les collectes de données pour les entrevues à 12 semaines se tiendront de juin à août 1995. C'est également durant cette dernière période que se tiendra l'analyse des plans de service.

LES RESPONSABILITÉS

3. **La chercheure principale**, étudiante au doctorat en santé publique est la personne qui assurera la coordination du projet.

3.1 Elle sera responsable du suivi, de la surveillance des étapes du projet et du règlement de tout problème concernant la recherche, survenant et pouvant être réglé aux niveaux techniques et opérationnels.

3.2 Elle s'engage à former le personnel des CLSC qui participera au projet, à fournir le matériel d'enquête, à faire le suivi et à apporter le support nécessaire aux différentes étapes de collecte de données par le biais de conseil, support et visites de suivi au besoin.

3.3 Elle s'engage à défrayer une partie des coûts inhérents à la tenue des entrevues si le CLSC en fait la demande. Cette contribution équivaudrait à $18.00 par patient admis à l'étude. La base de calcul est incluse en annexe.

3.4 Elle s'engage à faire, auprès des organismes subventionnaires du niveau régional, provincial ou fédéral les demandes de financement jugées nécessaires au bon déroulement de l'étude. Elle s'engage à informer le CLSC Métro de même que les autres CLSC de la Région-Montréal-Centre de toute demande de financement et à solliciter leur accord.

3.5 Elle s'engage, dans le cas où aucun financement n'était octroyé par les organismes subventionnaires, à défrayer une partie des coûts de la deuxième entrevue soit une somme de $10.00 par patient admis à l'étude. La base de calcul est incluse en annexe.

3.6 Elle s'engage à défrayer tous les coûts d'envoi postal, de reprographie et de communications effectués dans le cadre du projet de recherche.

3.7 Elle s'engage à inclure le matériel nécessaire pour obtenir un consentement éclairé de toutes les personnes admises à l'étude, suite à des explications complètes incluses en Annexe B. Ce consentement devra être confirmé par écrit et stipulera que la personne accepte de répondre à deux questionnaires et que les informations soient utilisées pour fin de comparaisons. Dans le cas où le choix au hasard désignerait la personne pour le sous-échantillon, elle acceptera également qu'une troisième entrevue puisse être sollicitée et que son dossier tenu au CLSC puisse être consulté de façon confidentielle pendant la durée de l'étude soit une période de neuf mois.

3.8 Elle s'engage à discuter des résultats de la recherche avec les CLSC participant avant leur diffusion sous forme de thèse, d'article ou sous toute autre forme publique.

3.9 Diane Morin pourra être rejointe en tous temps aux coordonnées suivantes:

a/s École des Sciences Infirmières
Pavillon Paul-Comtois
Cité universitaire
Université Laval
Québec (Qc)
G1K 7P4

Tél: 418-656-3958 bur.
Tél: 418-525-9107 dom.
Fax: 418-656-7747
Internet: diane.morin@esi.ulaval.ca
d.morin@lshtm.ac.uk

3.10 La directrice scientifique des travaux de doctorat de Diane Morin est:
Dr Donna L. Lamping
Professeure agrégée

Elle peut être rejointe aux coordonnées suivantes:
Health Services Research Unit
Department of Public Health and Policy
London School of Hygiene and Tropical Medicine
Keppel Street
Londres WC1E 7HT
Royaume Uni
Tél: 011-44-71-927-2380
011-44-71-636-8636
Fax: 011-44-71-436-3611
Internet: d.lamping@lshtm.ac.uk

4. **Le CLSC Métro de la Région-Montréal-Centre** accepte de participer à l'étude en permettant au personnel exerçant des tâches liées à l'admission de personnes au programme maintien à domicile de participer à la formation et de contribuer à la collecte de données à l'admission et à 12 semaines de l'admission. Les collectes de données porteront sur des indicateurs de qualité de vie et d'utilisation des services.

4.1 Le CLSC Métro s'engage à supporter les coûts inhérents à la formation de base des personnels de santé susceptibles d'être impliqués dans la sélection des personnes et dans l'utilisation des outils de mesure de qualité de vie à l'admission et lors d'une entrevue après 12 semaines de l'admission.

4.2 Dans le cas où malgré les demandes effectuées, aucun financement externe n'était alloué par les organismes subventionnaires sollicités, le CLSC s'engage au moins à supporter la moitié des coûts inhérents à la deuxième mesure de qualité de vie et d'utilisation des services d'une entrevue après 12 semaines de l'admission.

4.3 Le CLSC s'engage à contribuer à la recherche de financement par le biais de la diffusion de la présente entente auprès des organismes subventionnaires de niveau régional, provincial ou fédéral.

4.4 Le but du projet étant de mesurer la présence d'associations entre certains résultats auprès de population et les pratiques d'admission, le CLSC s'engage à permettre à la chercheure de recueillir l'information nécessaire à ses travaux dans les locaux du CLSC aux conditions suivantes. La chercheure devra avoir obtenu les autorisations nécessaires auprès des personnes incluses à l'étude. Elle devra avoir sollicité les autorisations auprès de la Direction Générale de l'institution selon les modalités en vigueur. Le consentement de même que les étapes touchant les autorisations devront faire l'objet d'agrément avant le début de l'étude. Il est entendu qu'aucun document ne pourra être consulté en dehors des locaux des CLSC. Un espace de travail permettant la préservation du caractère confidentiel des informations à recueillir lui sera fourni en temps et lieu. Une demande d'autorisation est incluse à l'Annexe F.

4.5 Le coordonnateur responsable du programme maintien à domicile pour le CLSC sera le partenaire opérationnel au projet. Ses coordonnées sont les suivantes:

CLSC METRO
Céline Bureau
1801, Boul. de Maisonneuve Ouest, Bureau 200, Montréal H3H 1J9
Tél:514- 932-2616

4.6 Cette entente pourra être résiliée dans le cas où des conditions critiques liées à l'adhésion d'autres CLSC des autres RR3S entravaient de façon irrémédiable la poursuite de la recherche telle qu'elle est définie dans ce protocole. A ce moment-là, tous autres arrangements devraient faire l'objet de signature d'un nouveau protocole d'entente.

En foi de quoi, les soussignés ont convenu de la présente entente, le 25/02/ 1995.

Céline Bureau
CLSC Métro

Diane Morin, Chercheure principale
Étudiante au doctorat

PROPOSITION D'ENTENTE ENTRE
LE CLSC GASTON-LESSARD
ET
DIANE MORIN, ÉTUDIANTE AU DOCTORAT EN SANTÉ PUBLIQUE
LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

Le Centre Local de Services Communautaires Gaston-Lessard, territoire de la Régie Régionale de la Santé et des Services Sociaux de l'Estrie (ci-après appelée "Région-Estrie") et Diane Morin, étudiante au doctorat en santé publique, désireux de conclure une entente concernant un projet de recherche intitulé "*Étude comparative de trois outils d'évaluation à l'admission au maintien à domicile: impact sur la qualité de vie, sur les plans de service et sur l'utilisation des services de santé par les personnes âgées de 65 ans et plus*", conviennent de ce qui suit.

L'ENTENTE

1. Le présent protocole d'entente concerne **les ententes sur les participations des partenaires au projet de recherche.** Il vise à établir les rôles et responsabilités des partenaires à l'intérieur du projet de recherche (appelé ci-après "Projet"); incluant les responsabilités d'ordre budgétaire.

LE PROJET

2. Les outils d'évaluation multidimensionnelle utilisés pour les personnes âgées de 65 ans et plus à l'admission aux soins à domicile sont devenus courants. Lorsqu'ils répondent à certains critères liés aux dimensions qu'ils abordent et lorsqu'ils sont la base du développement d'un plan de service, d'un plan d'intervention ou/et d'un plan de soin, la littérature démontre sans équivoque qu'ils sont associés à des gains significatifs pour les âgés. Les principaux gains sont des **améliorations** au niveau (i) du statut fonctionnel, (ii) du statut cognitif et (iii) de la survie; des impacts ont également ont été significativement associés à des **diminutions** dans (iv) l'utilisation des services hospitaliers, (v) les placements en centre d'accueil et d'hébergement, (vi) l'utilisation de soins médicaux et (vii) l'utilisation de médicaments prescrits. Finalement, des **associations** probables à une meilleure qualité de vie et à une plus grande satisfaction avec les soins et services sont non démontrées mais à l'étude présentement. Tous ces résultats sont particulièrement vrais dans les contextes d'unité gériatrique active et dans celui des soins à domicile. Trois outils d'évaluation, dont le CTMSP, le SMAF et l'outil de l'Estrie basé sur le CTMSP utilisés dans le cadre du programme Maintien à domicile des CLSC du Québec ont été déjà évalués pour leur globalité et leur utilité. Ils sont compatibles avec les définitions d'outils d'évaluation multidimensionnelle et concordent avec les recommandations de la littérature pour utilisation auprès de clientèles âgées. Ils s'adressent à des clientèles semblables et dans un souci d'efficacité, certains des impacts auxquels ils contribuent tels la qualité de vie et l'utilisation des services de santé par les personnes admises au programme de maintien à domicile pour des services long terme gagneraient à être

comparés. Cela pourrait procurer des informations susceptibles de contribuer à l'évaluation de leur efficacité et possiblement permettre de meilleures prises de décision quant à leur expansion vers d'autres Régions.

Le projet vise à analyser la présence d'associations entre l'utilisation de ces outils et les résultats attendus auprès des populations chez qui ils sont utilisés. Il vise également à comparer les plans de service (d'intervention et/ou de soins) issus des différentes évaluations.

Le projet de recherche comporte quatre objectifs opérationnels. La participation active du CLSC Gaston-Lessard est requise dans les trois premiers:

2.1 Objectif 1: Identifier les personnes pouvant être incluses dans l'étude

Activités	Personnes impliquées	Outil/temps requis
1. Formation des professionnel-les sur étude et outils de collecte.	D.Morin et les professionnel-les	1 heure

2.2 Objectif 2: Recueillir les caractéristiques à l'entrée au programme

Activités	Responsable	Outil/temps requis
1. Suite aux procédures habituelles d'admission, déterminer l'éligibilité pour inclusion.	Professionnel-les	Quelques minutes Critères Annexe A
2. Expliquer l'étude à la personne admissible et demander participation par consentement écrit.	Professionnel-les	Dix minutes Consentement Annexe B
3. Remplir le questionnaire avec la personne.	Professionnel-les	Vingt minutes Questionnaire Annexe C
4. Retourner le questionnaire.	Professionnel-les	Quelques minutes Enveloppe pré-adressée

2.3 Objectif 3: Recueillir les caractéristiques de résultat à 12 semaines

Activités	Responsable	Outil/temps requis
1. Remplir le questionnaire avec la personne.	Professionnel-les	Vingt minutes Questionnaire Annexe D
2. Retourner le questionnaire.	Professionnel-les	Quelques minutes Enveloppe pré-adressée

2.4 Objectif 4: Recueillir les caractéristiques du plan de service

Activités	Responsable	Outil/temps requis
1. Choix aléatoire	D.Morin	Local confidentiel
2. Analyse des plans de service.	D.Morin	

2.5 L'échéancier idéal de l'étude se situe entre janvier et septembre 1995. Les formations se tiendraient en janvier et février 1995. Les collectes de données à l'admission se tiendraient entre février et mai 1995 et subséquemment, les collectes de données pour les entrevues à 12 semaines se tiendront de juin à août 1995. C'est également durant cette dernière période que se tiendra l'analyse des plans de service.

LES RESPONSABILITÉS

3. **La chercheure principale**, étudiante au doctorat en santé publique est la personne qui assurera la coordination du projet.

3.1 Elle sera responsable du suivi, de la surveillance des étapes du projet et du règlement de tout problème concernant la recherche, survenant et pouvant être réglé aux niveaux techniques et opérationnels.

3.2 Elle s'engage à former le personnel des CLSC qui participera au projet, à fournir le matériel d'enquête, à faire le suivi et à apporter le support nécessaire aux différentes étapes de collecte de données par le biais de conseil, support et visites de suivi au besoin.

3.3 Elle s'engage à défrayer les coûts inhérents à la tenue des entrevues d'admission tel qu'évalué à l'Annexe E; soit une somme de $2,500.00 pour l'ensemble des huit CLSC de la Région-Estrie. Cette somme dont le montant est basé sur une hypothèse de 30 sujets par CLSC sera considérée comme forfaitaire. Elle sera versée d'ici la fin de 1995 à l'un CLSC qui fera par la suite les ajustements avec les autres CLSC, selon les modalités convenues entre eux.

3.4 Elle s'engage à faire, auprès des organismes subventionnaires du niveau régional, provincial ou fédéral les demandes de financement jugées nécessaires

au bon déroulement de l'étude. Elle s'engage à informer le CLSC Gaston-Lessard de même que les autres CLSC de la Région-Estrie de toute demande de financement et à solliciter leur accord.

3.5 Elle s'engage, dans le cas où aucun financement n'était octroyé par les organismes subventionnaires, à défrayer la moitié des coûts inhérents à la tenue des entrevues à 12 semaines tels qu'évalués à l'Annexe E; soit une somme additionnelle de $825.00 pour l'ensemble des huit CLSC participant. Cette somme sera versée au plus tard en septembre 1996 à l'un des huit CLSC qui fera par la suite les versements et ajustements avec les autres CLSC, selon les modalités que les CLSC auront convenu entre eux. Tel que stipulé au point 3.3 cette somme, quoique basée sur une hypothèse budgétaire est considérée forfaitaire.

3.6 Elle s'engage à défrayer tous les coûts d'envoi postal, de reprographie et de communications effectués dans le cadre du projet de recherche.

3.7 Elle s'engage à obtenir pour toute inclusion à l'étude un consentement éclairé de la personne, suite à des explications complètes incluses en Annexe B. Ce consentement devra être confirmé par écrit et stipulera que la personne accepte de répondre à deux questionnaires et que les informations soient utilisées pour fin de comparaisons. La personne acceptera également que son dossier tenu au CLSC puisse être consulté de façon confidentielle pendant la durée de l'étude soit une période de neuf mois.

3.8 Elle s'engage à discuter des résultats de la recherche avec les CLSC participant avant leur diffusion sous forme de thèse, d'article ou sous toute autre forme publique.

3.9 Diane Morin pourra être rejointe en tous temps aux coordonnées suivantes:

a/s École des Sciences Infirmières
Pavillon Paul-Comtois
Cité universitaire
Université Laval
Québec (Qc)
G1K 7P4

Tél: 418-656-3958 bur.
Tél: 418-525-9107 dom.
Fax: 418-656-7747
Internet: diane.morin@esi.ulaval.ca
d.morin@lshtm.ac.uk

3.10 La directrice scientifique des travaux de doctorat de Diane Morin est:

Dr Donna L. Lamping
Professeure agrégée

Elle peut être rejointe aux coordonnées suivantes:

Health Services Research Unit
Department of Public Health and Policy
London School of Hygiene and Tropical Medicine
Keppel Street
Londres WC1E 7HT
Royaume Uni

Tél: 011-44-71-927-2380
011-44-71-636-8636
Fax: 011-44-71-436-3611
Internet: d.lamping@lshtm.ac.uk

4. **Le CLSC Gaston-Lessard de la Région-Estrie** accepte de participer à l'étude en permettant au personnel exerçant des tâches liées à l'admission de personnes au programme maintien à domicile de participer à la formation et de contribuer à la collecte de données à l'admission et à 12 semaines de l'admission. Les collectes de données porteront sur des indicateurs de qualité de vie et d'utilisation des services.

4.1 Le CLSC Gaston-Lessard s'engage à supporter les coûts inhérents à la formation de base des personnels de santé susceptibles d'être impliqués dans la sélection des personnes et dans l'utilisation des outils de mesure de qualité de vie à l'admission et lors d'une entrevue après 12 semaines de l'admission. Cette contribution est évaluée à l'Annexe E à $1,280.00 pour l'ensemble des huit CLSC participant soit $160.00 par CLSC.

4.2 Dans le cas où malgré les demandes effectuées, aucun financement externe n'était alloué par les organismes subventionnaires sollicités, le CLSC s'engage à supporter la moitié des coûts inhérents à la deuxième mesure de qualité de vie et d'utilisation des services d'une entrevue après 12 semaines de l'admission. Cette contribution est évaluée à l'Annexe E à $825.00 pour l'ensemble des huit CLSC participant soit $103.00 par CLSC. Selon l'hypothèse de l'Annexe E, La contribution à l'étude totale et maximale du CLSC Gaston-Lessard serait donc de $263.00 avenant le cas où aucun financement externe n'était octroyé.

4.3 Le CLSC s'engage à contribuer à la recherche de financement par le biais de la diffusion de la présente entente auprès des organismes subventionnaires de niveau régional, provincial ou fédéral.

4.4 Le but du projet étant de mesurer la présence d'associations entre certains résultats auprès de population et les pratiques d'admission, le CLSC s'engage à permettre à la chercheure de recueillir l'information nécessaire à ses travaux dans les locaux du CLSC aux conditions suivantes. La chercheure devra avoir obtenu les autorisations nécessaires auprès des personnes incluses à l'étude. Elle devra avoir sollicité les autorisations auprès de la Direction Générale de l'institution selon les modalités en vigueur. Le consentement de même que les étapes touchant les autorisations devront faire l'objet d'agrément avant le début de l'étude. Il est entendu qu'aucun document ne pourra être consulté en dehors des locaux des CLSC. Un espace de travail permettant la préservation du caractère confidentiel des informations à recueillir lui sera fourni en temps et lieu. Une demande d'autorisation est incluse à l'Annexe F.

4.5 Le coordonnateur responsable du programme maintien à domicile pour le CLSC Gaston-Lessard sera le partenaire au projet. Ses coordonnées sont les suivantes:

CLSC Gaston-Lessard
Jacques Demers
1200, rue King Est, Bureau 100, Sherbrooke, J1G 1E4
Tél: 819-563-0144
Fax: 819-563-9912

4.6 Cette entente pourra être résiliée dans le cas où des conditions critiques liées à l'adhésion d'autres CLSC des autres RR3S entravaient de façon irrémédiable la poursuite de la recherche telle qu'elle est définie dans ce protocole. A ce moment-là, tous autres arrangements devraient faire l'objet de signature d'un nouveau protocole d'entente.

En foi de quoi, les soussignés ont convenu de la présente entente, le 28 décembre 1994.

~~Jacques Demers~~ DENIS LALUMIÈRE O.C.
CLSC Gaston-Lessard

Diane Morin, Chercheure principale
Étudiante au doctorat

PROPOSITION D'ENTENTE ENTRE
LE CLSC MARIA-THIBAULT
ET
DIANE MORIN, ÉTUDIANTE AU DOCTORAT EN SANTÉ PUBLIQUE
LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

Le Centre Local de Services Communautaires Maria-Thibault, territoire de la Régie Régionale de la Santé et des Services Sociaux de l'Estrie (ci-après appelée "Région-Estrie") et Diane Morin, étudiante au doctorat en santé publique, désireux de conclure une entente concernant un projet de recherche intitulé "*Étude comparative de trois outils d'évaluation à l'admission au maintien à domicile: impact sur la qualité de vie, sur les plans de service et sur l'utilisation des services de santé par les personnes âgées de 65 ans et plus*", conviennent de ce qui suit.

L'ENTENTE

1. Le présent protocole d'entente concerne **les ententes sur les participations des partenaires au projet de recherche**. Il vise à établir les rôles et responsabilités des partenaires à l'intérieur du projet de recherche (appelé ci-après "Projet"); incluant les responsabilités d'ordre budgétaire.

LE PROJET

2. Les outils d'évaluation multidimensionnelle utilisés pour les personnes âgées de 65 ans et plus à l'admission aux soins à domicile sont devenus courants. Lorsqu'ils répondent à certains critères liés aux dimensions qu'ils abordent et lorsqu'ils sont la base du développement d'un plan de service, d'un plan d'intervention ou/et d'un plan de soin, la littérature démontre sans équivoque qu'ils sont associés à des gains significatifs pour les âgés. Les principaux gains sont des **améliorations** au niveau (i) du statut fonctionnel, (ii) du statut cognitif et (iii) de la survie; des impacts ont également ont été significativement associés à des **diminutions** dans (iv) l'utilisation des services hospitaliers, (v) les placements en centre d'accueil et d'hébergement, (vi) l'utilisation de soins médicaux et (vii) l'utilisation de médicaments prescrits. Finalement, des **associations** probables à une meilleure qualité de vie et à une plus grande satisfaction avec les soins et services sont non démontrées mais à l'étude présentement. Tous ces résultats sont particulièrement vrais dans les contextes d'unité gériatrique active et dans celui des soins à domicile. Trois outils d'évaluation, dont le CTMSP, le SMAF et l'outil de l'Estrie basé sur le CTMSP utilisés dans le cadre du programme Maintien à domicile des CLSC du Québec ont été déjà évalués pour leur globalité et leur utilité. Ils sont compatibles avec les définitions d'outils d'évaluation multidimensionnelle et concordent avec les recommandations de la littérature pour utilisation auprès de clientèles âgées. Ils s'adressent à des clientèles semblables et dans un souci d'efficacité, certains des impacts auxquels ils contribuent tels la qualité de vie et l'utilisation des services de santé par les personnes admises au programme de maintien à domicile pour des services long terme gagneraient à être comparés. Cela pourrait procurer des informations susceptibles de contribuer à

l'évaluation de leur efficacité et possiblement permettre de meilleures prises de décision quant à leur expansion vers d'autres Régions.

Le projet vise à analyser la présence d'associations entre l'utilisation de ces outils et les résultats attendus auprès des populations chez qui ils sont utilisés. Il vise également à comparer les plans de service (d'intervention et/ou de soins) issus des différentes évaluations.

Le projet de recherche comporte quatre objectifs opérationnels. La participation active du CLSC Maria-Thibault est requise dans les trois premiers:

2.1 Objectif 1: Identifier les personnes pouvant être incluses dans l'étude

Activités	Personnes impliquées	Outil/temps requis
1. Formation des professionnel-les sur étude et outils de collecte.	D.Morin et les professionnel-les	1 heure

2.2 Objectif 2: Recueillir les caractéristiques à l'entrée au programme

Activités	Responsable	Outil/temps requis
1. Suite aux procédures habituelles d'admission, déterminer l'éligibilité pour inclusion.	Professionnel-les	Quelques minutes Critères Annexe A
2. Expliquer l'étude à la personne admissible et demander participation par consentement écrit.	Professionnel-les	Dix minutes Consentement Annexe B
3. Remplir le questionnaire avec la personne.	Professionnel-les	Vingt minutes Questionnaire Annexe C
4. Retourner le questionnaire.	Professionnel-les	Quelques minutes Enveloppe pré-adressée

2.3 Objectif 3: Recueillir les caractéristiques de résultat à 12 semaines

Activités	Responsable	Outil/temps requis
1. Remplir le questionnaire avec la personne.	Professionnel-les	Vingt minutes Questionnaire Annexe D
2. Retourner le questionnaire.	Professionnel-les	Quelques minutes Enveloppe pré-adressée

2.4 Objectif 4: Recueillir les caractéristiques du plan de service

Activités	Responsable	Outil/temps requis
1. Choix aléatoire	D.Morin	Local confidentiel
2. Analyse des plans de service.	D.Morin	

2.5 L'échéancier idéal de l'étude se situe entre janvier et septembre 1995. Les formations se tiendraient en janvier et février 1995. Les collectes de données à l'admission se tiendraient entre février et mai 1995 et subséquemment, les collectes de données pour les entrevues à 12 semaines se tiendront de juin à août 1995. C'est également durant cette dernière période que se tiendra l'analyse des plans de service.

LES RESPONSABILITÉS

3. **La chercheure principale**, étudiante au doctorat en santé publique est la personne qui assurera la coordination du projet.

3.1 Elle sera responsable du suivi, de la surveillance des étapes du projet et du règlement de tout problème concernant la recherche, survenant et pouvant être réglé aux niveaux techniques et opérationnels.

3.2 Elle s'engage à former le personnel des CLSC qui participera au projet, à fournir le matériel d'enquête, à faire le suivi et à apporter le support nécessaire aux différentes étapes de collecte de données par le biais de conseil, support et visites de suivi au besoin.

3.3 Elle s'engage à défrayer les coûts inhérents à la tenue des entrevues d'admission tel qu'évalué à l'Annexe E; soit une somme de $2,500.00 pour l'ensemble des huit CLSC de la Région-Estrie. Cette somme dont le montant est basé sur une hypothèse de 30 sujets par CLSC sera considérée comme forfaitaire. Elle sera versée d'ici la fin de 1995 à l'un CLSC qui fera par la suite les ajustements avec les autres CLSC, selon les modalités convenues entre eux.

3.4 Elle s'engage à faire, auprès des organismes subventionnaires du niveau régional, provincial ou fédéral les demandes de financement jugées nécessaires

au bon déroulement de l'étude. Elle s'engage à informer le CLSC Maria-Thibault de même que les autres CLSC de la Région-Estrie de toute demande de financement et à solliciter leur accord.

3.5 Elle s'engage, dans le cas où aucun financement n'était octroyé par les organismes subventionnaires, à défrayer la moitié des coûts inhérents à la tenue des entrevues à 12 semaines tels qu'évalués à l'Annexe E; soit une somme additionnelle de $825.00 pour l'ensemble des huit CLSC participant. Cette somme sera versée au plus tard en septembre 1996 à l'un des huit CLSC qui fera par la suite les versements et ajustements avec les autres CLSC, selon les modalités que les CLSC auront convenu entre eux. Tel que stipulé au point 3.3 cette somme, quoique basée sur une hypothèse budgétaire est considérée forfaitaire.

3.6 Elle s'engage à défrayer tous les coûts d'envoi postal, de reprographie et de communications effectués dans le cadre du projet de recherche.

3.7 Elle s'engage à obtenir pour toute inclusion à l'étude un consentement éclairé de la personne, suite à des explications complètes incluses en Annexe B. Ce consentement devra être confirmé par écrit et stipulera que la personne accepte de répondre à deux questionnaires et que les informations soient utilisées pour fin de comparaisons. La personne acceptera également que son dossier tenu au CLSC puisse être consulté de façon confidentielle pendant la durée de l'étude soit une période de neuf mois.

3.8 Elle s'engage à discuter des résultats de la recherche avec les CLSC participant avant leur diffusion sous forme de thèse, d'article ou sous toute autre forme publique.

3.9 Diane Morin pourra être rejointe en tous temps aux coordonnées suivantes:

a/s École des Sciences Infirmières
Pavillon Paul-Comtois
Cité universitaire
Université Laval
Québec (Qc)
G1K 7P4

Tél: 418-656-3958 bur.
Tél: 418-525-9107 dom.
Fax: 418-656-7747
Internet: diane.morin@esi.ulaval.ca
d.morin@lshtm.ac.uk

3.10 La directrice scientifique des travaux de doctorat de Diane Morin est:

Dr Donna L. Lamping
Professeure agrégée

Elle peut être rejointe aux coordonnées suivantes:

Health Services Research Unit
Department of Public Health and Policy
London School of Hygiene and Tropical Medicine
Keppel Street
Londres WC1E 7HT
Royaume Uni

Tél: 011-44-71-927-2380
011-44-71-636-8636
Fax: 011-44-71-436-3611
Internet: d.lamping@lshtm.ac.uk

4. **Le CLSC Maria-Thibault de la Région-Estrie** accepte de participer à l'étude en permettant au personnel exerçant des tâches liées à l'admission de personnes au programme maintien à domicile de participer à la formation et de contribuer à la collecte de données à l'admission et à 12 semaines de l'admission. Les collectes de données porteront sur des indicateurs de qualité de vie et d'utilisation des services.

4.1 Le CLSC Maria-Thibault s'engage à supporter les coûts inhérents à la formation de base des personnels de santé susceptibles d'être impliqués dans la sélection des personnes et dans l'utilisation des outils de mesure de qualité de vie à l'admission et lors d'une entrevue après 12 semaines de l'admission. Cette contribution est évaluée à l'Annexe E à $1,280.00 pour l'ensemble des huit CLSC participant soit $160.00 par CLSC.

4.2 Dans le cas où malgré les demandes effectuées, aucun financement externe n'était alloué par les organismes subventionnaires sollicités, le CLSC s'engage à supporter la moitié des coûts inhérents à la deuxième mesure de qualité de vie et d'utilisation des services d'une entrevue après 12 semaines de l'admission. Cette contribution est évaluée à l'Annexe E à $825.00 pour l'ensemble des huit CLSC participant soit $103.00 par CLSC. Selon l'hypothèse de l'Annexe E, La contribution à l'étude totale et maximale du CLSC Maria-Thibault serait donc de $263.00 avenant le cas où aucun financement externe n'était octroyé.

4.3 Le CLSC s'engage à contribuer à la recherche de financement par le biais de la diffusion de la présente entente auprès des organismes subventionnaires de niveau régional, provincial ou fédéral.

4.4 Le but du projet étant de mesurer la présence d'associations entre certains résultats auprès de population et les pratiques d'admission, le CLSC s'engage à permettre à la chercheure de recueillir l'information nécessaire à ses travaux dans les locaux du CLSC aux conditions suivantes. La chercheure devra avoir obtenu les autorisations nécessaires auprès des personnes incluses à l'étude. Elle devra avoir sollicité les autorisations auprès de la Direction Générale de l'institution selon les modalités en vigueur. Le consentement de même que les étapes touchant les autorisations devront faire l'objet d'agrément avant le début de l'étude. Il est entendu qu'aucun document ne pourra être consulté en dehors des locaux des CLSC. Un espace de travail permettant la préservation du caractère confidentiel des informations à recueillir lui sera fourni en temps et lieu. Une demande d'autorisation est incluse à l'Annexe F.

4.5 Le coordonnateur responsable du programme maintien à domicile pour le CLSC **Maria-Thibault** sera le partenaire au projet. Ses coordonnées sont les suivantes:

CLSC Maria-Thibault
Gérard D. Boulanger
3700, Laval, Lac-Mégantic, G6B 1A4
Tél: 819-583-2572 Fax: 819-583-5364

4.6 Cette entente pourra être résiliée dans le cas où des conditions critiques liées à l'adhésion d'autres CLSC des autres RR3S entravaient de façon irrémédiable la poursuite de la recherche telle qu'elle est définie dans ce protocole. A ce moment-là, tous autres arrangements devraient faire l'objet de signature d'un nouveau protocole d'entente.

En foi de quoi, les soussignés ont convenu de la présente entente, le 21 mars 1995.

Gérard D. Boulanger
CLSC Maria-Thibault

Diane Morin, Chercheure principale
Étudiante au doctorat

PROPOSITION D'ENTENTE ENTRE
LE CLSC FLEUR DE LYS
ET
DIANE MORIN, ÉTUDIANTE AU DOCTORAT EN SANTÉ PUBLIQUE
LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

Le Centre Local de Services Communautaires Fleur de Lys, territoire de la Régie Régionale de la Santé et des Services Sociaux de l'Estrie (ci-après appelée "Région-Estrie") et Diane Morin, étudiante au doctorat en santé publique, désireux de conclure une entente concernant un projet de recherche intitulé "*Étude comparative de trois outils d'évaluation à l'admission au maintien à domicile: impact sur la qualité de vie, sur les plans de service et sur l'utilisation des services de santé par les personnes âgées de 65 ans et plus*", conviennent de ce qui suit.

L'ENTENTE

1. Le présent protocole d'entente concerne **les ententes sur les participations des partenaires au projet de recherche.** Il vise à établir les rôles et responsabilités des partenaires à l'intérieur du projet de recherche (appelé ci-après "Projet"); incluant les responsabilités d'ordre budgétaire.

LE PROJET

2. Les outils d'évaluation multidimensionnelle utilisés pour les personnes âgées de 65 ans et plus à l'admission aux soins à domicile sont devenus courants. Lorsqu'ils répondent à certains critères liés aux dimensions qu'ils abordent et lorsqu'ils sont la base du développement d'un plan de service, d'un plan d'intervention ou/et d'un plan de soin, la littérature démontre sans équivoque qu'ils sont associés à des gains significatifs pour les âgés. Les principaux gains sont des **améliorations** au niveau (i) du statut fonctionnel, (ii) du statut cognitif et (iii) de la survie; des impacts ont également ont été significativement associés à des **diminutions** dans (iv) l'utilisation des services hospitaliers, (v) les placements en centre d'accueil et d'hébergement, (vi) l'utilisation de soins médicaux et (vii) l'utilisation de médicaments prescrits. Finalement, des **associations** probables à une meilleure qualité de vie et à une plus grande satisfaction avec les soins et services sont non démontrées mais à l'étude présentement. Tous ces résultats sont particulièrement vrais dans les contextes d'unité gériatrique active et dans celui des soins à domicile. Trois outils d'évaluation, dont le CTMSP, le SMAF et l'outil de l'Estrie basé sur le CTMSP utilisés dans le cadre du programme Maintien à domicile des CLSC du Québec ont été déjà évalués pour leur globalité et leur utilité. Ils sont compatibles avec les définitions d'outils d'évaluation multidimensionnelle et concordent avec les recommandations de la littérature pour utilisation auprès de clientèles âgées. Ils s'adressent à des clientèles semblables et dans un souci d'efficacité, certains des impacts auxquels ils contribuent tels la qualité de vie et l'utilisation des services de santé par les personnes admises au programme de maintien à domicile pour des services long terme gagneraient à être comparés. Cela pourrait procurer des informations susceptibles de contribuer à

l'évaluation de leur efficacité et possiblement permettre de meilleures prises de décision quant à leur expansion vers d'autres Régions.

Le projet vise à analyser la présence d'associations entre l'utilisation de ces outils et les résultats attendus auprès des populations chez qui ils sont utilisés. Il vise également à comparer les plans de service (d'intervention et/ou de soins) issus des différentes évaluations.

Le projet de recherche comporte quatre objectifs opérationnels. La participation active du CLSC Fleur de Lys est requise dans les trois premiers:

2.1 **Objectif 1:** Identifier les personnes pouvant être incluses dans l'étude

Activités	**Personnes impliquées**	**Outil/temps requis**
1. Formation des professionnel-les sur étude et outils de collecte.	D.Morin et les professionnel-les	1 heure

2.2 **Objectif 2:** Recueillir les caractéristiques à l'entrée au programme

Activités	**Responsable**	**Outil/temps requis**
1. Suite aux procédures habituelles d'admission, déterminer l'éligibilité pour inclusion.	Professionnel-les	Quelques minutes Critères Annexe A
2. Expliquer l'étude à la personne admissible et demander participation par consentement écrit.	Professionnel-les	Dix minutes Consentement Annexe B
3. Remplir le questionnaire avec la personne.	Professionnel-les	Vingt minutes Questionnaire Annexe C
4. Retourner le questionnaire.	Professionnel-les	Quelques minutes Enveloppe pré-adressée

2.3 **Objectif 3:** Recueillir les caractéristiques de résultat à 12 semaines

Activités	**Responsable**	**Outil/temps requis**
1. Remplir le questionnaire avec la personne.	Professionnel-les	Vingt minutes Questionnaire Annexe D
2. Retourner le questionnaire.	Professionnel-les	Quelques minutes Enveloppe pré-adressée

2.4 **Objectif 4**: Recueillir les caractéristiques du plan de service

Activités	**Responsable**	**Outil/temps requis**
1. Choix aléatoire	D.Morin	Local confidentiel
2. Analyse des plans de service.	D.Morin	

2.5 L'échéancier idéal de l'étude se situe entre janvier et septembre 1995. Les formations se tiendraient en janvier et février 1995. Les collectes de données à l'admission se tiendraient entre février et mai 1995 et subséquemment, les collectes de données pour les entrevues à 12 semaines se tiendront de juin à août 1995. C'est également durant cette dernière période que se tiendra l'analyse des plans de service.

LES RESPONSABILITÉS

3. **La chercheure principale**, étudiante au doctorat en santé publique est la personne qui assurera la coordination du projet.

3.1 Elle sera responsable du suivi, de la surveillance des étapes du projet et du règlement de tout problème concernant la recherche, survenant et pouvant être réglé aux niveaux techniques et opérationnels.

3.2 Elle s'engage à former le personnel des CLSC qui participera au projet, à fournir le matériel d'enquête, à faire le suivi et à apporter le support nécessaire aux différentes étapes de collecte de données par le biais de conseil, support et visites de suivi au besoin.

3.3 Elle s'engage à défrayer les coûts inhérents à la tenue des entrevues d'admission tel qu'évalué à l'Annexe E; soit une somme de $2,500.00 pour l'ensemble des huit CLSC de la Région-Estrie. Cette somme dont le montant est basé sur une hypothèse de 30 sujets par CLSC sera considérée comme forfaitaire. Elle sera versée d'ici la fin de 1995 à l'un CLSC qui fera par la suite les ajustements avec les autres CLSC, selon les modalités convenues entre eux.

3.4 Elle s'engage à faire, auprès des organismes subventionnaires du niveau régional, provincial ou fédéral les demandes de financement jugées nécessaires

au bon déroulement de l'étude. Elle s'engage à informer le CLSC Fleur de Lys de même que les autres CLSC de la Région-Estrie de toute demande de financement et à solliciter leur accord.

3.5 Elle s'engage, dans le cas où aucun financement n'était octroyé par les organismes subventionnaires, à défrayer la moitié des coûts inhérents à la tenue des entrevues à 12 semaines tels qu'évalués à l'Annexe E; soit une somme additionnelle de $825.00 pour l'ensemble des huit CLSC participant. Cette somme sera versée au plus tard en septembre 1996 à l'un des huit CLSC qui fera par la suite les versements et ajustements avec les autres CLSC, selon les modalités que les CLSC auront convenu entre eux. Tel que stipulé au point 3.3 cette somme, quoique basée sur une hypothèse budgétaire est considérée forfaitaire.

3.6 Elle s'engage à défrayer tous les coûts d'envoi postal, de reprographie et de communications effectués dans le cadre du projet de recherche.

3.7 Elle s'engage à obtenir pour toute inclusion à l'étude un consentement éclairé de la personne, suite à des explications complètes incluses en Annexe B. Ce consentement devra être confirmé par écrit et stipulera que la personne accepte de répondre à deux questionnaires et que les informations soient utilisées pour fin de comparaisons. La personne acceptera également que son dossier tenu au CLSC puisse être consulté de façon confidentielle pendant la durée de l'étude soit une période de neuf mois.

3.8 Elle s'engage à discuter des résultats de la recherche avec les CLSC participant avant leur diffusion sous forme de thèse, d'article ou sous toute autre forme publique.

3.9 Diane Morin pourra être rejointe en tous temps aux coordonnées suivantes:

a/s École des Sciences Infirmières
Pavillon Paul-Comtois
Cité universitaire
Université Laval
Québec (Qc)
G1K 7P4

Tél: 418-656-3958 bur.
Tél: 418-525-9107 dom.
Fax: 418-656-7747
Internet: diane.morin@esi.ulaval.ca
d.morin@lshtm.ac.uk

3.10 La directrice scientifique des travaux de doctorat de Diane Morin est:
Dr Donna L. Lamping
Professeure agrégée

Elle peut être rejointe aux coordonnées suivantes:
Health Services Research Unit
Department of Public Health and Policy
London School of Hygiene and Tropical Medicine
Keppel Street
Londres WC1E 7HT
Royaume Uni
Tél: 011-44-71-927-2380
011-44-71-636-8636
Fax: 011-44-71-436-3611
Internet: d.lamping@lshtm.ac.uk

4. **Le CLSC Fleur de Lys de la Région-Estrie** accepte de participer à l'étude en permettant au personnel exerçant des tâches liées à l'admission de personnes au programme maintien à domicile de participer à la formation et de contribuer à la collecte de données à l'admission et à 12 semaines de l'admission. Les collectes de données porteront sur des indicateurs de qualité de vie et d'utilisation des services.

4.1 Le CLSC Fleur de Lys s'engage à supporter les coûts inhérents à la formation de base des personnels de santé susceptibles d'être impliqués dans la sélection des personnes et dans l'utilisation des outils de mesure de qualité de vie à l'admission et lors d'une entrevue après 12 semaines de l'admission. Cette contribution est évaluée à l'Annexe E à $1,280.00 pour l'ensemble des huit CLSC participant soit $160.00 par CLSC.

4.2 Dans le cas où malgré les demandes effectuées, aucun financement externe n'était alloué par les organismes subventionnaires sollicités, le CLSC s'engage à supporter la moitié des coûts inhérents à la deuxième mesure de qualité de vie et d'utilisation des services d'une entrevue après 12 semaines de l'admission. Cette contribution est évaluée à l'Annexe E à $825.00 pour l'ensemble des huit CLSC participant soit $103.00 par CLSC. Selon l'hypothèse de l'Annexe E, La contribution à l'étude totale et maximale du CLSC Fleur de Lys serait donc de $263.00 avenant le cas où aucun financement externe n'était octroyé.

4.3 Le CLSC s'engage à contribuer à la recherche de financement par le biais de la diffusion de la présente entente auprès des organismes subventionnaires de niveau régional, provincial ou fédéral.

4.4 Le but du projet étant de mesurer la présence d'associations entre certains résultats auprès de population et les pratiques d'admission, le CLSC s'engage à permettre à la chercheure de recueillir l'information nécessaire à ses travaux dans les locaux du CLSC aux conditions suivantes. La chercheure devra avoir obtenu les autorisations nécessaires auprès des personnes incluses à l'étude. Elle devra avoir sollicité les autorisations auprès de la Direction Générale de l'institution selon les modalités en vigueur. Le consentement de même que les étapes touchant les autorisations devront faire l'objet d'agrément avant le début de l'étude. Il est entendu qu'aucun document ne pourra être consulté en dehors des locaux des CLSC. Un espace de travail permettant la préservation du caractère confidentiel des informations à recueillir lui sera fourni en temps et lieu. Une demande d'autorisation est incluse à l'Annexe F.

4.5 Le coordonnateur responsable du programme maintien à domicile pour le CLSC Fleur de Lys sera le partenaire au projet. Ses coordonnées sont les suivantes:

CLSC Fleur de Lys
Roger Plante
460, 2ème Avenue, Weedon, J0B 3J0
Tél: 819-877-3434 Fax: 819-877-3714

4.6 Cette entente pourra être résiliée dans le cas où des conditions critiques liées à l'adhésion d'autres CLSC des autres RR3S entravaient de façon irrémédiable la poursuite de la recherche telle qu'elle est définie dans ce protocole. A ce moment-là, tous autres arrangements devraient faire l'objet de signature d'un nouveau protocole d'entente.

En foi de quoi, les soussignés ont convenu de la présente entente, le ..... 1994.

Roger Plante
CLSC Fleur de Lys

Diane Morin, Chercheure principale
Étudiante au doctorat

APPENDIX D

SCREENING, CONSENT AND ENTRY QUESTIONNAIRE FORMS

COMPARATIVE STUDY ON
ADMISSION PROCEDURES TO HOME CARE
INCLUSION CRITERION AND CONSENT FORM

WARNING: This section presents the inclusion criterion. Please complete in order to decide if the person is eligible to participate in the study.

INSTRUCTIONS: Please tick where appropriate. To be eligible, the person absolutely needs to meet all of the following 6 criterion.

1) The person is **65 years old or more;** ☐

2) The person is **evaluated with the regional procedure;** ☐

3) It is expected that the person will be admitted to **home care for a mid-to-long term period (≥3 months);** ☐

4) The person **does not have cognitive impairment** to a point that she or he can not answer the questions needed by the admission procedure; ☐

5) The person is not being admitted for **terminal care** with a poor prognosis at three months. ☐

6) The person is **understanding french or english** sufficiently to answer the admission questionnaire ☐

ASK FOR CONSENT IF AND ONLY IF THE PERSON MEETS ALL OF THE 6 CRITERION

THE PERSON REFUSES ☐

COMPLETE PAGE 2
AND RETURN TO
DIANE MORIN

THE PERSON ACCEPTS ☐

COMPLETE PAGE 4
AND RETURN TO
DIANE MORIN

ALL INFORMATION WILL BE KEPT STRICTLY CONFIDENTIAL

1. Date of birth: _____
   day month year

2. Gender Feminine ☐ Masculine ☐

3. Main medical diagnosis: _____

4. Other diagnosis/symptoms: _____

5. **Tick when the characteristic is present.**

   a. has a restricted mobility to a point that she/he can not totally or partially **dress himself or herself** without help; ☐

   b. has a restricted mobility to a point that she/he can not totally orpartially **feed himself or herself** without help; ☐

   c. has a restricted mobility to a point that she/he can not totally or partially **transfer from bed to chair or from chair to toilet** without help; ☐

   d. has a restricted mobility to a point that she/he can not totally or partially **do her/his own housekeeping and cooking** without help; ☐

   e. suffers from urinary or intestinal **incontinence**; ☐

   f. **lives alone**; ☐

   g. does not have a **significant person (caregiver)** near home (family, friend, community support reachable within an hour); ☐

WARNING: This section includes details about the study in order to inform the person and seek agreement to participate in the study

1. INFORMATION ABOUT THE STUDY

1.1 Purpose
The purpose of the study is to analyze the relationships existing between home care admission procedures and different patient outcomes as quality of life and service utilization. The study will compare two procedures : Montreal's versus heterogeneous ones.

1.2 Expected benefits
Determine home care admission efficiency.

1.3 Inconvenience
We cannot anticipate that physical or moral disadvantages or risks could be linked with this study.

1.4 Tasks to be performed
Two interviews are proposed: one at the time of the CLSC's admission procedure. It will investigate the perceived quality of life at the moment of admission. The second interview will be done at 12 weeks after admission to home care. This interview will investigate (i) the perceived quality of life and (ii) the service used during the last 12 weeks period.

1.5 Rights of the individual
The person accepting to contribute to the study can withdraw from it at any time, without any prior notice, if his/her contribution does not appear to her/him to be any more relevant. The person has to inform the investigator or the personel from the CLSC indicating the reason for his/her withdrawal. The investigator can also terminate the study, in the study's interest, in the person's interest or for other reasons she would judge relevant enough. Rights for confidentiality and anonymity will strictly be preserved by erasing all names and replacing them by numbers. The study will therefore respect and protect personal individual rights for confidentiality.

1.6 The investigator asking for consent
This study will be performed under the responsibility of Mrs Diane Morin, nurse, doctoral student in public health and policy. She works under the supervision of a scientific committee chaired by Dr Donna L. Lamping. This study is also supported by your CLSC. Diane Morin can be reached anytime by yourself at Université Laval in Quebec City at the following number: 418-656-3958 or through your nurse from the CLSC.

2. *CONSENT*

2.1 *I fully understand the explanations given to me concerning the study and I accept to participate to it.*

2.2 *I fully understand that strict confidentiality will be provided.*

2.3 *I fully understand also that if I want, I can withdraw from the study at anytime without any prior notice.*

2.4 *I give permission to Diane Morin to come to my home to interview me.* I also give her permission to use the information from the questionnaires and from my chart at the CLSC. I allow her to use this information in the only perspective given by the goal and objectives of the study.

Consent signed by (fill in capital letters please)

Name _____

Address _____

_____

CLSC: _____

Record No. at CLSC: _____

Signature of the patient: _____

Projet de recherche sur les procédures d'admission
au programme maintien à domicile des CLSC

QUESTIONNAIRE
LORS DE L'ADMISSION

ENGLISH VERSION

No Dossier au CLSC:_____

Code du CLSC:_____

Date de l'entrevue: _____

Nom de l'interviewer du CLSC:_____

This section is about your views on your health

INSTRUCTIONS: This survey asks for your views about your health. This information will help keep track of how you feel and how well you are able to do your usual activities. Answer every question answering as indicated. If you are unsure about how to answer a question, please give the best answer you can.

1. In general, would you say your health is:

(circle one)

Excellent 1
Very good 2
Good 3
Fair 4
Poor 5

2. Compared to one year ago, how would you rate your health in general now?

(circle one)

Much better now than one year ago . . 1
Somewhat better now than one year ago . 2
About the same as one year ago 3
Somewhat worse now than one year ago . 4
Much worse now than one year ago . . . 5

3. The following items are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?

(circle one number on each line)

ACTIVITIES	Yes, limited a lot	Yes, limited a little	No, not limited at all
a. **Vigorous activities**, such as running, lifting heavy objects, participating in strenuous sports	1	2	3
b. **Moderate activities**, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf	1	2	3
c. **Lifting or carrying** groceries	1	2	3
d. Climbing **several** flights of stairs	1	2	3
e. Climbing **only one** flight of stairs	1	2	3
f. **Bending, kneeling, or stooping**	1	2	3
g. Walking **more than a mile**	1	2	3
h. Walking **several blocks**	1	2	3
i. Walking **one block**	1	2	3
j. **Bathing or dressing** yourself	1	2	3

4. During the past 4 weeks have you had any of the following problems with your work or other regular daily activities as a result of your physical health?

(circle one number on each line)

	YES	NO
a. Cut down on the **amount of time** you spent on work or other activities	1	2
b. **Accomplished less** than you would like	1	2
c. Were limited in the **kind** of work or other activities	1	2
d. **Had difficulty** performing the work or other activities (for example, it took extra effort)	1	2

5. During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?

(circle one number on each line)

	YES	NO
a. Cut down the **amount of time** you spent on work r other activities	1	2
b. **Accomplished less** than you would like	1	2
c. Didn't work or do other activities as **carefully** as usual	1	2

6. During the past 4 weeks, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbours, or groups?

(circle one)

Not at all 1
Slightly 2
Moderately 3
Quite a bit 4
Extremely 5

7. How much bodily pain have you had during the past four weeks?

(circle one)

None 1
Very mild 2
Mild 3
Moderate 4
Severe 5
Very severe 6

8. During the past 4 weeks, how much did pain interfere with your normal work (including both work outside and housework)?

(circle one)

Not at all 1
A little bit 2
Moderately 3
Quite a bit 4
Extremely 5

9. These questions are about how you feel and how things have been during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the past four weeks:

(circle one number on each line)

	All the time	Most of the time	A good bit of the time	Some of the time	A little of the time	None of the time
a. Did you feel full of pep?	1	2	3	4	5	6
b. Have you been a very nervous person?	1	2	3	4	5	6
c. Have you felt so down in the dumps that nothing could cheer you up?	1	2	3	4	5	6
d. Have you felt calm and peaceful?	1	2	3	4	5	6
e. Did you have a lot of energy?	1	2	3	4	5	6
f. Have you felt downhearted and blue?	1	2	3	4	5	6
g. Did you feel worn out?	1	2	3	4	5	6
h. Have you been a happy person?	1	2	3	4	5	6
i. Did you feel tired?	1	2	3	4	5	6

10. During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting friends, relatives, etc.)?

(circle one number on each line)

All of the time 1
Most of the time 2
Some of the time 3
A little of the time 4
None of the time 5

11. How TRUE or FALSE is each of the following statements for you ?

(circle one number on each line)

	Definitely true	Mostly true	Don't know	Mostly false	Definitely false
a. I seem to get sick a little easier than other people	1	2	3	4	5
b. I am as healthy as anybody I know	1	2	3	4	5
c. I expect my health to get worse	1	2	3	4	5
d. My health is excellent	1	2	3	4	5

12. Choose the best answer for how you felt over the past week.

(circle one number in each line)

	YES	NO
a. Are you basically satisfied with your life?	1	2
b. Have you dropped many of your activities and interests?	1	2
c. Do you feel that your life is empty?	1	2
d. Do you often get bored?	1	2
e. Are you hopeful about the future?	1	2
f. Are you bothered by thoughts you can't get out of your head?	1	2
g. Are you in good spirits most of the time?	1	2
h. Are you afraid something bad is going to happen to you?	1	2
i. Do you feel happy most of the time?	1	2
j. Do you often feel helpless?	1	2
k. Do you often get restless and fidgety?	1	2
l. Do you prefer to stay at home rather than go out and doing new things?	1	2
m. Do you frequently worry about the future?	1	2
n. Do you feel you have more problems with memory than most?	1	2
o. Do you think it is wonderful to be alive now?	1	2
p. Do you often feel downhearted and blue?	1	2
q. Do you feel pretty worthless the way you are now?	1	2
r. Do you worry a lot about the past?	1	2
s. Do you find life very interesting?	1	2
t. Is it hard for you to get started on new projects?	1	2
u. Do you feel full of energy?	1	2
v. Do you feel that your situation is hopeless?	1	2
w. Do you feel that most people are better off than you are?	1	2
x. Do you frequently get upset over little things?	1	2
y. Do you frequently feel like crying?	1	2
z. Do you have trouble concentrating?	1	2
aa. Do you enjoy getting up in the morning?	1	2
bb. Do you prefer to avoid social gatherings?	1	2
cc. Is it easy for you to make decision?	1	2
dd. Is your mind as clear as it used to be?	1	2

APPENDIX E

REMINDER LETTER

{Date}

{Name and adress interviewer}

Objet: Étude comparative des procédures d'admission au maintien à domicile

A qui de droit,

La présente est pour vous aviser que bientôt 12 semaines se seront écoulées depuis l'entrevue d'admission que vous avez tenue avec Monsieur ou Madame **{Name of the patient}**, dont le numéro de dossier au CLSC est: **{File No of the patient}**.

L'entrevue à 12 semaines devrait se tenir le: **{Date of interview}**. Je joins le questionnaire, des exemplaires sont également disponibles à votre CLSC auprès votre coordonnateur ou coordonnatrice.

Pourriez-vous vous assurer que de mettre cette entrevvue à votre agenda ou en discuter avec votre coordonnatrice, coordonnateur si jamais vous étiez dans la stricte impossibilité de tenir cette entrevue à 12 semaines nécessaire dans le cadre de l'étude sur les procédures d'admission.

En vous remerçiant sincèrement,

Diane Morin
Étudiante au doctorat

c.c. coordonnateur ou coordonnatrice du programme

APPENDIX F

QUESTIONNAIRE AT 12-WEEK FOLLOW-UP

QUESTIONNAIRE POUR
L'ENTREVUE À 12 SEMAINES

ENGLISH VERSION

*Code du CLSC:*_____

*No dossier au CLSC:*_____

Date de l'entrevue: _____

*Interviewer du CLSC:*_____

This section is about your views on your health

INSTRUCTIONS: This survey asks for your views about your health. This information will help keep track of how you feel and how well you are able to do your usual activities. Answer every question answering as indicated. If you are unsure about how to answer a question, please give the best answer you can.

1. In general, would you say your health is:

(circle one)

Excellent 1
Very good 2
Good 3
Fair 4
Poor 5

2. Compared to one year ago, how would you rate your health in general now?

(circle one)

Much better now than one year ago . . 1
Somewhat better now than one year ago . 2
About the same as one year ago 3
Somewhat worse now than one year ago . 4
Much worse now than one year ago . . . 5

3. The following items are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?

(circle one number on each line)

ACTIVITIES	Yes, limited a lot	Yes, limited a little	No, not limited at all
a. **Vigorous activities**, such as running, lifting heavy objects, participating in strenuous sports	1	2	3
b. **Moderate activities**, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf	1	2	3
c. **Lifting or carrying** groceries	1	2	3
d. Climbing **several** flights of stairs	1	2	3
e. Climbing **only one** flight of stairs	1	2	3
f. **Bending, kneeling, or stooping**	1	2	3
g. Walking **more than a mile**	1	2	3
h. Walking **several blocks**	1	2	3
i. Walking **one block**	1	2	3
j. **Bathing or dressing** yourself	1	2	3

4. During the past 4 weeks have you had any of the following problems with your work or other regular daily activities as a result of your physical health?

(circle one number on each line)

	YES	NO
a. Cut down on the **amount of time** you spent on work or other activities	1	2
b. **Accomplished less** than you would like	1	2
c. Were limited in the **kind** of work or other activities	1	2
d. **Had difficulty** performing the work or other activities (for example, it took extra effort)	1	2

5. During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?

(circle one number on each line)

	YES	NO
a. Cut down the **amount of time** you spent on work r other activities	1	2
b. **Accomplished less** than you would like	1	2
c. Didn't work or do other activities as **carefully** as usual	1	2

6. During the past 4 weeks, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbours, or groups?

(circle one)

Not at all 1
Slightly 2
Moderately 3
Quite a bit 4
Extremely 5

7. How much bodily pain have you had during the past four weeks?

(circle one)

None 1
Very mild 2
Mild 3
Moderate 4
Severe 5
Very severe 6

8. During the past 4 weeks, how much did pain interfere with your normal work (including both work outside and housework)?

(circle one)

Not at all 1
A little bit 2
Moderately 3
Quite a bit 4
Extremely 5

9. **These questions are about how you feel and how things have been during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the past four weeks:**

(circle one number on each line)

	All the time	Most of the time	A good bit of the time	Some of the time	A little of the time	None of the time
a. Did you feel **full of pep**?	1	2	3	4	5	6
b. Have you been a very **nervous person**?	1	2	3	4	5	6
c. Have you felt so **down** in the dumps that nothing could cheer you up?	1	2	3	4	5	6
d. Have you felt **calm and peaceful**?	1	2	3	4	5	6
e. Did you have a **lot of energy**?	1	2	3	4	5	6
f. Have you felt **downhearted and blue**?	1	2	3	4	5	6
g. Did you feel **worn out**?	1	2	3	4	5	6
h. Have you been a **happy** person?	1	2	3	4	5	6
i. Did you feel **tired**?	1	2	3	4	5	6

10. **During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting friends, relatives, etc.)?**

(circle one number on each line)

All of the time 1
Most of the time 2
Some of the time 3
A little of the time 4
None of the time 5

11. **How TRUE or FALSE is each of the following statements for you ?**

(circle one number on each line)

	Definitely true	Mostly true	Don't know	Mostly false	Definitely false
a. I seem to **get sick a** little easier than other people	1	2	3	4	5
b. I am as **healthy as** anybody I know	1	2	3	4	5
c. I expect **my health to get worse**	1	2	3	4	5
d. My **health is excellent**	1	2	3	4	5

PART II: This section is about the services you needed

12. Please answer to each of the following questions by ticking YES or NO in the appropriate space. If the answer is YES, indicate how many nights during which the mentionned services were needed.

Institutional services	NO	YES▸▸▸▸▸▸▸▸ Nbr nights
a. During the last 12 weeks (3 months), have you been **admitted to a hospital**?	☐	☐▸▸▸▸▸▸▸▸▸▸
b. During the last twelve weeks (3 months), have you been **admitted to a long term care facility**?	☐	☐▸▸▸▸▸▸▸▸▸▸

13. Please answer to each of the following questions by ticking YES or NO in the appropriate space. If the answer is YES, indicate how many times the mentionned services were needed.

Medical services	NO	YES▸▸▸▸▸▸▸▸ Nbr time
a. During the last 12 weeks (3 months), did you attend any appointments with a doctor in a **private clinic**?	☐	☐ ▸▸▸▸▸▸▸▸▸▸
b. During the last 12 weeks (3 months), did you attend any appointments with a doctor at the **CLSC**?	☐	☐ ▸▸▸▸▸▸▸▸▸▸
c. During the last 12 weeks (3 months), did you see a doctor at the **outpatient department of a hospital**?	☐	☐ ▸▸▸▸▸▸▸▸▸▸
d. During the last 12 weeks (3 months), did you see a doctor at **the emergency** services of a hospital?	☐	☐ ▸▸▸▸▸▸▸▸▸▸
e. During the last 12 weeks (3 months), did a doctor visited you at **your own home**?	☐	☐ ▸▸▸▸▸▸▸▸▸▸

14. Please answer to each of the following questions by ticking YES or NO in the appropriate space.

Services received from the CLSC	NO	YES
a. During the last 12 weeks (3 months), did you receive **nursing care servicesat** home from your CLSC?	1	2
b. During the last 12 weeks (3 months), did you receive **home help services** from your CLSC?	1	2
c. During the last 12 weeks (3 months), did you receive **physiotherapy or ergotherapy services** at home from your CLSC?	1	2
d. During the last 12 weeks (3 months), did you receive **psychosocial support services** at home from your CLSC?	1	2

APPENDIX G

CIRS-G SCORING SHEET AND MANUAL OF GUIDELINES

SCORING SHEET
CUMULATIVE ILLNESS RATING SCALE
FOR GERIATRICS- CIRS(G)

PATIENT . . . . . .

CLSC . . . . . FILE No . . . . . .

DATE . . . . . .

INSTRUCTIONS: Please read the CIRS(G) Manual. Write brief descriptions of the medical problem(s) that jsutify the endorsed score on the line following each item (Use the reverse side for more writing space).

RATING STRATEGY

0 - No problem

1 - Current mild problem or past significant problem

2 - Moderate disability or morbidity/requires "first line" therapy

3 - Severe/constant significant problem/"uncontrolable" chronic problem

4 - Extremely severe/immediate treatment required/end organ failure/severe impairment

SYSTEMS	SCORE
Heart	
Vascular	
Hematopoeitic	
Respiratory	
Eyes, ears, nose throat and larynx	
Upper gastrointestinal tract	
Lower gastrointestinal tract	
Liver	
Renal	
Genito-urinary	
Musculoskeletal/integument	
Neurological	
Endocrine/metabolic and breast	
Psychiatric illness	

Total number categories endorsed	
Total Score	
Severity Index	
Number categories at level-3 severity	
Number categories at level-4 severity	

Five summary variables are listed at the bottom of the scoring sheet CIRS(G) operationalized with a manual of guidelines geared towards the geriatric patient (Miller et al., 1993)

A MANUAL OF GUIDELINES

FOR SCORING

THE CUMULATIVE ILLNESS RATING SCALE FOR GERIATRICS (CIRS-G)

MAY 1991

Written by

Mark D. Miller, M.D. with Adele Towers, M.D.
University of Pittsburgh
School of Medicine
Department of Geriatric Psychiatry
Western Psychiatric Institute and Clinic
3811 O'Hara Street
Pittsburgh, Pennsylvania 15213

ACKNOWLEDGMENTS

We acknowledge the following for their generous contributions in their subspecialty for reviewing the CIRS-G manual. Harold E. Leeper, M.D., ophthalmology; Arthur Greenberg, M.D., nephrology; Gary Gruen, M.D., orthopaedics; James Herndon, M.D., orthopaedics; A. Hind Rifai, M.D., geriatric psychiatry; Barry Hirsch, M.D., ENT; Irvin L. Paradis, M.D., pulmonology; Robert M. Rogers, M.D., pulmonology; Beth Piraino, M.D., nephrology; Bruce Pollock, M.D., Ph.D., geriatric psychiatry, pharmacology; Rosalind Ramsey-Goldman, M.D., rheumatology; Alan Robinson, M.D., endocrinology; Mark Thompson, M.D., cardiology; Adele Towers, M.D., general internal medicine; Marshall W. Webster, M.D., vascular surgery; Lawrence Wechsler, M.D., neurology; Jaroslava Zoubek, M.D., urology; George Zubenko, M.D., Ph.D., psychiatry; Sati Mazumdar, Ph.D., biostatistics; Richard Schulz, director of gerontology.

PHILOSOPHY AND DEVELOPMENT OF THE SCALE

Compiling and quantifying medical problems in the elderly population would allow meaningful comparison of medical burden and treatment outcomes in elderly patients with variable and complex medical problems. The Cumulative Illness Rating Scale (CIR), developed by Lin, Lin and Gurel,[1] published in JAGS in 1968 appealed to the writers intuitively as a user friendly but comprehensive review of medical problems by organ system, based on a 0 thru 4 rating, yielding a cumulative score. This scale was revised to reflect common problems of the elderly with an emphasis on morbidity using specific examples and was renamed the Cumulative Illness Rating Scale for Geriatrics (CIRS-G).

Some "arbitrary" decisions were made for categorizing certain conditions that could overlap more than one category and thus be counted twice, e.g., dementia is categorized in psychiatry although it overlaps with neurology, vertigo in the Ear, Nose and Throat category although it could also be in neurology, and CNS vascular lesions are confined to neurology although they technically overlap with "vascular." See individual sections of the manual for further details.

EDUCATION OF RATER

Nurses, physician assistants, nurse practitioners or physicians are required to have the necessary background for completing this scale. Due to the judgement required, some physician consultation may be necessary to clarify complex medical problems or their severity.

THE MINIMUM DATABASE REQUIRED

It is expected that every patient have a complete history and physical with a designated problem list, height, weight, and baseline labs including a

complete blood count and differential, chem profile to include electrolytes, liver and kidney function, serum B12, thyroid function, cholesterol level, and an EKG. For rating psychiatric conditions the rater is expected to be familiar with the Folstein Mini-Mental Status Exam (Folstein, Folstein, & McHugh,[2] 1975) and the Diagnostic and Statistical Manual III-R (DSM III-R).[3]

Other information of more specialized nature will increase the accuracy of the rating in a given patient and should be used when available. Scoring "live" patients (rather than retrospective chart reviews) is recommended to be able to clarify points that could differentiate two score levels more accurately.

RATING STRATEGY

Scoring contingencies for every possible medical problem is obviously too cumbersome and quickly exhausts efforts to maintain simplicity and ease of use. The CIRS-G scale seeks to outline intuitive severity levels within each category to serve as a guide for the rater to interpolate the particular problem set of a given patient. We acknowledge that judgement is ultimately required for a "best fit" and that rigorous specificity may be traded off for the intuitive "face validity" and ease of use of this scale.

SCORING

Scoring was modified in the CIRS-G to yield five numbers: the total number of categories endorsed, the total score, the ratio of total score/number of endorsed categories (yielding a severity index per category), and the number of categories at level 3 and 4 for a given patient. This rating strategy allows the reader to see at a glance whether a given patient's

total score reflects a few serious problems or multiple problems of mild to moderate severity as well as potential severe problems that merit a 3 or 4 rating. A single page scoring sheet also provides a rating for each organ system as well as space for a brief written description of the particular problem that merited the score (See sample scoring sheet).

Space provided on the scoring sheet is intended for a brief description of the problem that merited the endorsed score to facilitate more detailed retrospective analysis.

RATING ACTIVE VS CHRONIC PROBLEMS

Repeating this scale on the same patient at two different points of time may show a decline in total score if there were acute problems at time 1 that had resolved at time 2, however, this scale is clearly weighted toward chronic problems (including "status post" diagnoses) and is therefore cumulative such that the CIRS-G score will generally increase over time in a given patient.

RATING SUGGESTIONS (GENERAL)

We have found it easier to rate the severity of medical problems within a category by defining "mild" and "extremely severe" first, i.e., 1 and 4 and subsequently "moderate" and "severe," (2 and 3). The bulk of judgement, in our experience, rests in differentiating 2 and 3.

Note the following descriptors for a given level of severity:

0 - No Problem,

1 - Current mild problem or past significant problem

2 - Moderate disability or morbidity/ requires "first line" therapy

3 - Severe/ constant significant disability/ "uncontrollable" chronic problems

4 - Extremely Severe/ immediate treatment required/end organ failure/severe impairment in function

LEVEL 1

Level 1 - Current mild problem or past significant problem.

Any current medical problem that causes mild discomfort or disability, or has occasional exacerbations that have an overall minor impact on morbidity should be rated a "1," for example, a hiatal hernia with occasional heartburn treated with prn antacids. Medical problems that are not currently active but were significant problems in the past should also be listed as a "1," for example, passage of a kidney stone. Past childhood illnesses, minor surgery, uncomplicated healed fractures, minor injuries, teeth extractions, or events so remote without sequelae (e.g., one febrile seizure in childhood) need not be listed at all. However, if any of the above leave a suspicion of potential future complications the rater should err on the side of inclusion, and briefly describe his/her concerns in the space provided.

LEVELS 2 AND 3

Level 2 - Moderate disability or morbidity/requires "first line" therapy.

Level 3 - Severe/constant significant disability/"uncontrollable" chronic problems.

Level 2 should be endorsed for medical conditions that require daily medication of "first line" nature, for example, patients requiring daily nonsteroidal anti-inflammatory drugs for arthritis or daily digoxin to control

congestive heart failure.

Level 3 should be endorsed for chronic conditions that are not compensated for with first line therapy, for example, requiring steroids for rheumatologic conditions or lung disease. "Constant significant disability" describes patients whose underlying pathology is not fully compensated by medical regimens, for example, patients with exertional angina would endorse a level "3" because their underlying pathology is not fully compensated by medical regimens but many less strenuous activities are possible (i.e., level "4" is not indicated).

LEVEL 4 - Extremely Severe.

Immediate treatment required/end organ failure/severe impairment in function. This level describes the late stages of disease or disability within a category. Generally, this level reflects the failure to arrest the disease process with resulting disability, pain, or restricted activities of daily living (ADL's). Alternatively, any acute condition that requires immediate treatment e.g., bladder outlet obstruction would also qualify as a "4." Severely limited ambulation or ADL's or sensory impairment would also endorse a "4," in the appropriate category for example, blindness, deafness or being wheelchair bound.

RATING MALIGNANCIES

Consistent scoring of severity ratings for various malignancies is a difficult problem. Each malignancy has its own rating system and prognostic indicators, the complexity of which would quickly exceed the scope of the intended simplicity and ease of use of this scale.

The following general guidelines are intended to provide a reasonably accurate delineation of medical burden for cancer without excessive complexity.

Level 1). Cancer diagnosed in the remote past without evidence of recurrence or sequelae in the past 10 years.

2). Cancer diagnosed in the past without evidence of recurrence or sequelae in the past five years.

3). Required chemotherapy, radiation, hormonal therapy or surgical procedure for cancer in the past five years.

4). Recurrent malignancy of life threatening potential/ failed containment of the primary malignancy/ palliative treatment stage.

These ratings are to be made in the appropriate organ category for a given malignancy.

ORGAN SPECIFIC CATEGORIES

The following organ specific categories will attempt to provide guidelines for consistent rating of comparable severity. Common conditions will be stressed with the focus on the "judgement strategy" that can then be applied to other problems not listed.

HEART

0). No problem.

1). Remote MI (> five years ago)/occasional angina treated with prn meds.

2). CHF compensated with meds/daily anti-angina meds/left ventricular

hypertrophy/atrial fibrillation/bundle branch block/daily antiarrhythmic drugs.

3). Previous MI within five years/abnormal stress test/status post percutaneous coronary angioplasty or coronary artery bypass graft surgery.

4). Marked activity restriction secondary to cardiac status (i.e., unstable angina or intractable congestive heart failure).

The bulk of heart disease is encompassed by atherosclerotic heart disease, arrythmias, congestive heart failure and valvular disease. Within each of these categories the 1-4 rating of severity must be judged.

Atherosclerotic Heart Disease

Mild through extremely severe stages of atherosclerotic heart disease are reflected in the above levels as outlined.

Congestive Heart Failure

Requiring daily medications for CHF merits at least a "2," intractable CHF a "4" and an intermediate condition a "3."

Arrhythmias

EKG findings of atrial fibrillation, right or left bundle branch block, or the necessity of daily antiarrhythmic drugs merits "2" at least, a bifasicular block a "3." In patients who require a pacemaker, placement for an incidental finding of periods of bradycardia during a holter monitor would score a "2," whereas placement of a pacemaker for cariogenic syncope would merit a "3."

Valvular Disease

Detectable murmurs that indicate valvular pathology without activity restriction would merit a "1," more severely compromising valvular disease would require a progressively higher rating.

Pericardial Pathology

A pericardial effusion or pericarditis would merit at least a "3."

VASCULAR

0). No problem.

1). Hypertension compensated with salt restriction and weight loss/serum cholesterol > 200 mg/dl.

2). Daily antihypertensive meds/one symptom of atherosclerotic disease (angina, claudication, bruit, amaurosis fugax, absent pedal pulses)/ aortic aneurysm < 4 cm.

3). Two or more symptoms of atherosclerosis [see above].

4). Previous surgery for vascular problem/aortic aneurysm > 4 cm.

Hypertension

Defined as a persistently elevated diastolic pressure > 90 mm Hg. When managed drug free - "1," requiring single daily antihypertensive - "2," requiring two or more drugs for control or with evidence of left ventricular hypertrophy - "3."

Peripheral Atherosclerotic Disease

Evidence of at least one physical symptom or imaging evidence (e.g., angiogram) merits a "2," two or more symptoms a "3" and if bypass graft surgery was required or is currently indicated a "4" is merited.

Intracranial vascular event

For consistency, CNS vascular events are listed under neurology.

Aortic Aneurysm

If < 4 cm a "3," if > 4cm a "4."

HEMATOPOIETIC (blood, blood vessels and cells, marrow, spleen, lymphatics)

0). No problem.

1). Hemoglobin: females > 10 < 12, males > 12 < 14/anemia of chronic disease.

2). Hemoglobin: females > 8 < 10, males > 10 < 12/anemia secondary to iron, vitamin B12, or folate deficiency or chronic renal failure/total white blood cell count > 2000 but < 4000.

3). Hemoglobin: females < 8, males < 10/total WBC < 2000.

4). Any leukemia, any lymphoma.

Malignancy

Any hematological malignancy would merit a "4."

Anemia

Sex specific hemoglobin cut-offs are provided above. An identifiable etiology other than chronic disease merits a "2"or higher if the anemia is more severe.

Leucopenia

Total WBC cut-offs are provided.

RESPIRATORY (lungs,bronchi,trachea below the larynx)

0). No problem.

1). Recurrent episodes of acute bronchitis/currently treated asthma with prn inhalers/cigarette smoker > 10 but < 20 pack years.

2). X-ray evidence of COPD/requires daily theophylline or inhalers/treated for pneumonia two or more times in the past five years/smoked 20-40 pack years.

3). Limited ambulation secondary to limited respiratory capacity/requires oral steroids for lung disease/smoked > 40 pack years.

4). Requires supplemental Oxygen/at least one episode of respiratory failure requiring assisted ventilation/any lung cancer.

Smoking Status

Smoking is a significant respiratory and cardiovascular risk and is rated according to lifetime pack years (the number of packs smoked per day X the number of years smoked in their lifetime). Ex-smokers, e.g., those with 25 pack-years but who have been smoke-free for the most recent 20 years would merit a lower rating than a 25 pack-year patient who is currently smoking (in this case a "1" instead of a "2").

Chronic Bronchitis, Asthma, and Emphysema

These conditions are rated "1" if only prn inhalers are required, "2" if daily theophylline or inhalers are required, "3" if steroids are required and "4" if supplemental oxygen is required. More objective evidence, e.g. blood gases would help to sharpen the appropriate level.

Pneumonia

An acute pneumonia treated as an outpatient would merit a "3," and if hospitalization was required a "4". Two or more episodes of pneumonia in the past five years would merit a "2".

EYES, EARS, NOSE AND THROAT AND LARYNX

0). No problem.

1). Corrected vision 20/40;/chronic sinusitis/mild hearing loss.

2). Corrected vision 20/60 or reads newsprint with difficulty/requires hearing aid/chronic sinonasal complaints requiring medication/requires medication for vertigo.

3). Partially blind (requires an escort to venture out)/unable to read newsprint/conversational hearing still impaired with hearing aid.

4). Functional blindness/functional deafness/laryngectomy/requires surgical intervention for vertigo.

Impaired vision

To simplify the potential complexity of this category, the developers decided to score according to severity of the sensory disability and avoid rating each type of pathology. Therefore, whether cataracts, glaucoma, macular degeneration or other pathology is underlying the impaired vision, it is rated as follows: if they complain of decreased vision despite corrective lenses but have no restriction in activities and can read newsprint rate it a "1", if they have difficulty reading newsprint or driving due to vision - "2," if they cannot read newsprint or require assistance from a sighted person - "3," and if the are "functionally blind" i.e., unable to read, recognize a

familiar face from across the room or negotiate a novel environment alone, a "4" is merited.

Note: The term "functional" refers to ability to function and does not imply psychogenic origin.

Hearing Impairment

Similarly, hearing is rated by degree of sensory impairment as outlined above.

Vertigo, Lightheadedness and Dizziness

These complaints are very frequent in the elderly and would merit a "2" if medications are required for control and a "4" if surgical intervention is required.

Other conditions

Of the myriad of other EENT conditions, rating should be based on an estimate of the level of disability or impairment e.g., laryngectomy merits a "4" as it severely limits communication. etc.

UPPER GI (esophagus, stomach, duodenum)

0). No problem.

1). Hiatal hernia/heartburn complaints treated with prn meds.

2). Needs daily H2 blocker or antacid/documented gastric or duodenal ulcer within five years.

3). Active ulcer/guiac positive stools/any swallowing disorder or dysphagia.

4). Gastric cancer/history of perforated ulcer/melena or hematochezia from UGI source.

Ulcers

Symptoms of heartburn, and the diagnoses of hiatal hernia, gastritis and gastric or duodenal ulcer can be seen on a continuum of severity, i.e., mild symptoms requiring prn antacids merit a "1," daily antiacid regimens - "2," an active ulcer or in combination with guiac positive stools - "3," and a history of perforated ulcer or heavy bleeding from an UGI source a "4."

Cancer

Any UGI malignancy generally merits a "4." (see "Rating Malignancies").

LOWER GI (intestines, hernias)

0). No problem.

1). Constipation managed with prn meds/active hemorrhoids/status post hernia repair.

2). Requires daily bulk laxatives or stool softeners/diverticulosis/ untreated hernia.

3). Bowel impaction in the past year/daily use of stimulant laxatives or enemas.

4). Hematochezia from lower GI source, currently impacted, diverticulitis flare up/status post bowel obstruction/bowel carcinoma.

Constipation

Constipation is rated by severity most easily by what type and how frequent laxatives are required or by a history of impaction as above.

Bleeding and Cancer

Any active bleeding generally merits a "4" as does the diagnosis of cancer (see "Rating Malignancies").

PAGE
MISSING IN
ORIGINAL

PAGE
MISSING IN
ORIGINAL

2). Abnormal pap smear/frequent UTI's (three or more in past year)/urinary incontinence (non stress) in females/BPH with hesitancy or frequency/ current UTI/any urinary diversion procedure/status post TURP.

3). Prostatic cancer in situ (i.e., found incidently during TURP)/vaginal bleeding/cervical carcinoma in situ/hematuria/status post urosepsis in past year.

4). Acute urinary retention/any GU carcinoma except as above.

This category is long on description as sex-specific pathology must be considered separately.

Urinary incontinence

This problem is more common in elderly women and merits a "2" if it occurs only occasionally or in response to a cough, etc. (stress incontinence). Daily incontinence requiring adult diapers or regular nighttime incontinence would merit a "3."

Vaginal bleeding and abnormal PAP smears

Vaginal bleeding of significant persistent nature merits a "3," a previous hysterectomy for bleeding or fibroid nonmalignant tumors merits a "1" (as the bleeding has been cured). One abnormal PAP smear can result from chronic vaginitis and is usually repeated, a definite abnormal smear merits a "2," cervical carcinoma in situ merits a "3," and any GU carcinoma merits a "4."

Urinary Infections

Recurrent UTI's (three or more in the past year) merits a "1" in women and at least a "3" in men. A current UTI merits a "2," a history of urosepsis in the past year a "3" and current urosepsis a "4."

Prostate problems

An enlarged prostate on physical exam merits a "1," with urinary hesitancy or frequency or status post Trans Urethral Prostatectomy (TURP) merits a "2," an incidental finding of carcinoma in situ found during a TURP merits a "3," and prostate carcinoma or bladder outlet obstruction generally merits a "4" (see "Rating Malignancies").

Urinary Diversion Procedure

Patients with ileal loops, indwelling catheters or nephrostomies would merit at least a "2."

MUSCULOSKELETAL/INTEGUMENT (muscles, bone and skin)

0). No problem.

1). Uses prn meds for arthritis or has mildly limited ADL's from joint pathology/excised non-melanotic skin cancers/skin infections requiring antibiotics within a year.

2). Daily antiarthritic meds or use of assistive devices or moderate limitation in ADL's/daily meds for chronic skin conditions/melanoma without metastasis.

3). Severely impaired ADL's secondary to arthritis/requires steroids for arthritic condition/vertebral compression fractures from osteoporosis

4). Wheelchair bound/severe joint deformity or severely impaired usage/osteomyelitis/any bone or muscle carcinoma/metastatic melanoma.

Skin cancers

Malignant melanoma must be differentiated from other localized skin cancers that merit a "1." A melanoma diagnosis merits a "2," with metastasis, a "4."

Arthritis

Arthritis is most simply rated according to resulting disability or level of treatment required as outline above.

Osteoporosis, Osteomyelitis, and Cancer

Osteoporosis with compression fractures a "3." Osteomyelitis requires intensive inpatient treatment generally and merits a "4." Any muscle or joint cancer generally merits a "4" (see "Rating Malignancies").

NEUROLOGICAL (brain, spinal cord and nerves)

0). No problem.

1). Frequent headaches requiring prn meds without interference with daily activities/a history of TIA phenomena (at least one).

2). Requires daily meds for chronic headaches or headaches that regularly interfere with daily activities/ S/P CVA without significant residual/neurodegenerative disease (Parkinson's, MS, ALS, etc) - mild severity.

3). S/P CVA with mild residual dysfunction/any CNS neurosurgical procedure/ neurodegenerative disease - moderate severity.

4). S/P CVA with residual functional hemiparesis or aphasia/neurodegenerative disease-severe.

Headaches

Frequent Headaches requiring prn medication merits a "1," requiring daily anti-headache prophylaxis or intermittent severe headaches (e.g., migraines that require bed rest) merits a "2."

TIA's and Strokes

One transient ischemic attack (TIA) merits a "2." Cerebrovascular accidents (CVA) are rated as above according to the level of residual deficit or disability, for example, a patient who had hemiparesis and speech slurring but regained articulate speech and walks with only a slight remaining gait disturbance would be scored a "3,"

Vertigo, Dizziness and Lightheadedness

For consistency these are grouped under Ear, Nose and Throat although this category overlaps with neurology.

Neurodegenerative Disease

Parkinson's Disease, Multiple Sclerosis, and Amyotrophic Lateral Sclerosis (ALS) are three examples of a wide variety of degenerative neurological diseases. These illness are rated according to the severity of impairment at the time of rating, beginning at the "2" level. An example of a "3" would be a parkinsonian patient who shows residual bradykinesia and shuffling gait despite anti-parkinsonian medication, an example of a "4" would be patient unable to care for their own basic needs (bathing, toileting etc.) because of the severe progression of their illness.

Dementia (see "Psychiatric Conditions")

Although dementia can be considered a neurological as well as a psychiatric condition, for simplicity it should be grouped under "psychiatric conditions" as it's effect on functioning is primarily in this realm. For arbitrary clarity, Alzheimer's disease should be listed only under psych. If the dementia stems from multi-infarct dementia or other neurological condition with concomitant neurological signs or symptoms, both "neurologic" and

"psychiatric" categories should be endorsed at the appropriate level for severity.

ENDOCRINE/METABOLIC AND BREAST (includes diffuse infections and poisonings)

0). No problem.

1). Diabetes mellitus compensated with diet/obesity: BMI > 30*/requires thyroid hormone replacement.

2). Diabetes mellitus requiring insulin or oral agents/fibrocystic breast disease.

3). Any electrolyte disturbance requiring hospital treatment/morbid obesity BMI > 45*.

4). Brittle or poorly controlled diabetes mellitus or diabetic coma in the past year/requires adrenal hormone replacement/adrenal, thyroid or breast carcinoma.

Diabetes Mellitus

Recognized diabetes mellitus controlled with diet merits a "1," when insulin or oral agents are required, a "2" is merited; brittle or poorly controlled diabetes or a history of diabetic ketoacidosis or nonketotic hyperosmolar coma in the past year merits a "4," and an intermediate level of severity e.g., fairly well controlled blood sugars in the 300 mg/dl range with some retinopathy or peripheral neuropathy would merit a "3."

*See Body Mass Index (BMI) Tables in the Index

Hormone replacement /Electrolyte disturbance

Thyroid replacement in the elderly is common and should be rated a "1" if otherwise uncomplicated. Potassium supplementation for patients taking diuretics is routine and would not merit a rating unless the serum potassium level was severely low. Abnormalities of other electrolytes can be serious conditions, for simplicity, we have designated those conditions that require hospital treatment to merit at least a "3." Adrenal hormone replacement merits a "3." Other endocrine conditions require judgement of relative severity according to the level of morbidity caused by the condition.

*Obesity

Obesity is considered a risk for a variety of conditions and is rated with guidelines of relative severity using the Body Mass Index (BMI)[4] as the current standard for measuring weight for a given height. Note the sex specific charts or nomograms provided in the index of this manual.

Breast Pathology

For lack of a better place, breast problems were included with endocrine/metabolic even though the breast is technically and exocrine gland. Listing it near the end of this manual is not meant to imply any relative unimportance. Fibrocystic breast disease merits a "2," breast cancer generally merits a "4" (see "Rating Malignancies").

PSYCHIATRIC ILLNESS

0). No psychiatric problem or history thereof.

1). Minor psychiatric condition or history thereof. Specifically: previous outpatient mental health treatment during a crisis/ outpatient treatment for depression > 10 years ago/current usage of

minor tranquilizers for episodic anxiety (occasional usage)/mild early dementia (MMS > 25 < 28).

2). A history of Major Depression (by DSM III-R criteria) within the past 10 years (treated or untreated)/mild dementia (MMS 20-25)/any previous psychiatric hospitalization/any psychotic episode substance abuse history > 10 years ago.

3). Currently meets DSM III-R criteria for major depression or two or more episodes of major depression in the past 10 years/ moderate dementia (MMS 15-20)7current usage of daily antianxiety medication/currently meets DSM III-R criteria for substance abuse or dependance/requires daily antipsychotic medication.

4). Current mental illness requiring psychiatric hospitalization, institutionalization, or intensive outpatient management, e.g., patients with severe or suicidal depression, acute psychosis or psychotic decompensation, severe agitation from dementia, severe substance abuse etc./Severe dementia (MMS < 15).

Rating psychiatric illness in keeping with the stated principles of this scale may seem like a daunting task particularly for raters with little mental health experience. Psychiatric consultation may be required for clarification. Thorough mental health histories and mental status exams are rarely obtained in the course of medical/surgical evaluations, therefore, retrospective rating from charts may show an inadequate database to properly rate all but the most obvious mental health impairments. Nevertheless, the following organizing threads are intended to guide the rater to reasonable

assessments. It is assumed the rater has a working familiarity with DSM III-R[3] and the Mini-Mental Status Exam (Folstein et al.[2], 1975).

For the elderly, dementia and depression are the most common psychiatric diagnoses and are a focus of the rating categories according to severity and time period since the last episode. Common sense dictates that those patients with more severe illness or more frequent episodes or who require more intensive intervention merit a higher severity rating.

The outlined criteria follow patterns of increasing severity for five major categories of illness: dementia, depression, anxiety, psychosis, and substance abuse. These representative categories were chosen as generally representative of the larger group of significant mental illnesses.

Rating strategies for a myriad of other disorders would overwhelm the scope of this scale. As in the medical categories, other psychiatric disorders must be judged by the rater as meeting a similar level of impairment as the listed examples.

Patients with **Personality disorders** are defined broadly as having chronic difficulties maintaining satisfying interpersonal relationships. These disorders may produce severe impairments in some patients and should be rated accordingly; e.g., suicidal potential requires inquiry into the lethality and intent of any previous suicide attempts and may merit a "3" or "4." Psychiatric consultation is recommended for the inexperienced rater.

Delirium (see DSM III-R definition) is assumed to have an underlying organic etiology and should be scored both according to the level of psychiatric impairment and in the appropriate medical category, e.g., delirium secondary to hyponatremia requiring hospitalization would merit a "4" for "Psych" and at least a "3" for "Metabolic" (depending on severity).

Psychosomatic disorders are often difficult to differentiate from "pure" medical disorders and judgement is ultimately required to endorse a psychiatric rating if it best fits the clinical picture.

REFERENCES

(1) Linn BS, Linn MW, Gurel L. Cumulative illness rating scale. J Amer Ger Soc 1968;16:622-626.

(2) Folstein MF, Folstein SE, McHugh PR. Mini-mental state: A practical method for grading the cognitive state of patients for the clinician. J Psych Res 1975;12:189-198.

(3) American Psychiatric Association: Diagnostic and statistical manual of mental disorders, 3rd Edition - Revised. Washington, D.C., 1987.

(4) Bray, GA, et al. Evalaution of the obese patient. I. An algorithm. JAMA 1976;235:1487.

Scoring Sheet

CUMULATIVE ILLNESS RATING SCALE FOR GERIATRICS (CIRS-G)

Miller, Paradis, and Reynolds 1991

PATIENT_____AGE_____

RATER_____DATE_____

Instructions: Please refer to the CIRS-G Manual. Write brief descriptions of the medical problem(s) that justified the endorsed score on the line following each item. (Use the reverse side for more writing space).

RATING STRATEGY

0 - No Problem
1 - Current mild problem or past significant problem
2 - Moderate disability or morbidity/requires "first line" therapy
3 - Severe/constant significant disability/"uncontrollable" chronic problems
4 - Extremely Severe/immediate treatment required/end organ failure/severe impairment in function

	SCORE
HEART	_____
VASCULAR	_____
HEMATOPOIETIC	_____
RESPIRATORY	_____
EYES, EARS, NOSE AND THROAT AND LARYNX	_____
UPPER GI	_____
LOWER GI	_____
LIVER	_____
RENAL	_____
GENITOURINARY	_____
MUSCULOSKELETAL/INTEGUMENT	_____
NEUROLOGICAL	_____
ENDOCRINE/METABOLIC AND BREAST	_____
PSYCHIATRIC ILLNESS	_____

TOTAL NUMBER CATEGORIES ENDORSED.....

TOTAL SCORE.....

Severity Index: (total score/total number of categories endorsed)..

Number of categories at level 3 severity.....

Number of categories at level 4 severity.....

APPENDIX 5: BODY MASS INDEX*†

		WEIGHT kg (lb)																				
HEIGHT		45.3	49.90	54.43	58.97	63.50	68.04	72.57	77.11	81.65	86.18	90.72	95.25	99.79	104.33	108.86	113.40	117.93	122.47	127.01	131.54	136.08
Inches	Meters	(100)	(110)	(120)	(130)	(140)	(150)	(160)	(170)	(180)	(190)	(200)	(210)	(220)	(230)	(240)	(250)	(260)	(270)	(280)	(290)	(300)
55	1.397	23.24	25.56	27.89	30.21	32.54	34.86	37.19	39.51	41.84												
56	1.422	22.43	24.67	26.92	29.16	31.40	33.65	35.89	38.13	40.37	42.62											
57	1.448	21.64	23.80	25.96	28.13	30.29	32.46	34.62	36.79	38.95	41.12	43.28										
58	1.473	20.90	22.99	25.08	27.17	29.26	31.35	33.44	35.53	37.62	39.71	41.80	43.89									
59	1.498	20.20	22.22	24.24	26.26	28.28	30.29	32.32	34.33	36.35	38.37	40.39	42.41	44.43								
60	1.524	19.53	21.48	23.43	25.39	27.34	29.29	31.25	33.20	35.15	37.11	39.06	41.01	42.96	44.92	46.87	48.82	50.78	52.73	54.68	56.64	58.59
61	1.549	18.89	20.78	22.67	24.56	26.45	28.34	30.23	32.12	34.01	35.90	37.79	39.68	41.57	43.46	45.35	47.24	49.13	51.02	52.90	54.79	56.68
62	1.575	18.29	20.12	21.95	23.78	25.61	27.44	29.26	31.09	32.92	34.75	36.58	38.41	40.24	42.07	43.90	45.72	47.55	49.38	51.21	53.04	54.87
63	1.600	17.71	19.48	21.26	23.03	24.80	26.57	28.34	30.11	31.88	33.66	35.43	37.20	38.97	40.74	42.51	44.28	46.06	47.83	49.60	51.37	53.14
64	1.626	17.16	18.88	20.60	22.31	24.03	25.75	27.46	29.18	30.90	32.61	34.33	36.05	37.76	39.48	41.20	42.91	44.63	46.34	48.06	49.78	51.49
65	1.651	16.64	18.30	19.97	21.63	23.30	24.96	26.62	28.29	29.95	31.62	33.28	34.94	36.61	38.27	39.94	41.60	43.26	44.93	46.59	48.26	49.92
66	1.676	16.14	17.75	19.37	20.98	22.60	24.21	25.82	27.44	29.05	30.67	32.28	33.89	35.51	37.12	38.74	40.35	41.96	43.58	45.19	46.81	48.42
67	1.702	15.66	17.23	18.79	20.36	21.93	23.49	25.06	26.62	28.19	29.76	31.32	32.89	34.46	36.02	37.59	39.15	40.72	42.29	43.85	45.42	46.99
68	1.727	15.20	16.72	18.24	19.77	21.29	22.81	24.33	25.85	27.37	28.89	30.41	31.93	33.45	34.97	36.49	38.01	39.53	41.05	42.57	44.09	45.61
69	1.753	14.77	16.24	17.72	19.20	20.67	22.15	23.63	25.10	26.58	28.06	29.53	31.01	32.49	33.96	35.44	36.92	38.39	39.87	41.35	42.82	44.30
70	1.778	14.35	15.78	17.22	18.65	20.09	21.52	22.96	24.39	25.83	27.26	28.70	30.13	31.57	33.00	34.44	35.87	37.30	38.74	40.17	41.61	43.04
71	1.803		15.34	16.74	18.13	19.52	20.92	22.32	23.71	25.10	26.50	27.89	29.29	30.68	32.08	33.47	34.87	36.26	37.66	39.05	40.45	41.84
72	1.829		14.92	16.27	17.63	18.99	20.34	21.70	23.05	24.41	25.77	27.12	28.48	29.84	31.19	32.55	33.90	35.26	36.62	37.97	39.33	40.69
73	1.854		14.51	15.83	17.15	18.47	19.79	21.11	22.43	23.75	25.07	26.39	27.71	29.02	30.34	31.66	32.98	34.30	35.62	36.94	38.26	39.58
74	1.879		14.12	15.41	16.69	17.97	19.26	20.54	21.83	23.11	24.39	25.68	26.96	28.25	29.53	30.81	32.10	33.38	34.66	35.95	37.23	38.52
75	1.905			14.99	16.25	17.50	18.75	20.00	21.25	22.50	23.75	25.00	26.25	27.49	28.75	30.00	31.25	32.50	33.75	35.00	36.25	37.50
76	1.930			14.61	15.82	17.04	18.26	19.47	20.69	21.91	23.13	24.34	25.56	26.78	27.99	29.21	30.43	31.65	32.86	34.08	35.30	36.52

* From Bray, G.A., et al. Evaluation of the obese patient. I. An algorithm. JAMA, *235*:1487, 1976

† Expressed as weight (kg)/height (meters)^2

APPENDIX H

SERVICE USE DATA COLLECTION FORM MATRIX