

**SUBSTUDY 1: COMPARATIVE COST ANALYSIS OF  
HOME CARE AND RESIDENTIAL CARE SERVICES**

**PRELIMINARY FINDINGS**

**A Report Prepared for  
the Health Transition Fund, Health Canada**

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**National Evaluation of the Cost-Effectiveness of Home Care**  
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## EXECUTIVE SUMMARY

Growth in the elderly population and restraint in the health sector have led to decision makers placing an increasing priority on home care services. In Canada, there are three models of home care: a preventive and maintenance model which is designed to reduce the rate of deterioration for persons with relatively low level care needs; an acute care substitution model where home care substitutes for hospital care; and a long term care substitution model which uses home care as a substitute for facility care. This study focuses on the long term care substitution model. The research question is: In the British Columbia continuing care sector, is home care for the elderly a cost-effective alternative for government funders to care in long term care facilities, by level of care?

To answer this question, data were obtained on three cohorts of clients for one year prior to initial assessment and three years post-assessment. The cohorts were new admissions to the British Columbia continuing care (home care and residential care) system in the 1987/88, 1990/91 and 1993/94 fiscal years. Costs to government for home care services, residential services, pharmaceuticals, fee-for-service physician services and hospital services were analyzed.

The central finding of this study was that, on average, the overall health care costs to government for clients in home care are about one half to three quarters of the costs for clients in facility care, by level of care. A related finding was that costs differ by the type of client. The lowest home care costs were for individuals who were stable in their type and level of care. For clients who died the costs for home care were higher, compared to clients in long term care facilities. It was also found that some one half of the overall health care costs for home care clients were attributable to their use of acute care hospital services and that a significant portion of the health costs for home care clients occur at transition points, that is, when there is a change in the client's type, and/or level, of care.

These findings are compared to the American literature which indicates that home care is not a cost-effective substitute for residential care. Possible reasons for the differences in findings are discussed. The study concludes with a discussion of the implications of the findings for a series of potential, future, policy agendas regarding: the organization and management of continuing care services; legislation and administrative policy; service delivery; resource allocation; information systems; and research.

Note: This is a report of preliminary findings. The final report will include data from the 1996/97 cohort of admissions to the British Columbia continuing care system.

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## CHAPTER 1: INTRODUCTION

The purpose of this study is to investigate the relative cost-effectiveness of home care services for the elderly compared to care in long term care facilities. This subject is especially timely in Canada in light of our aging population. Concern has been expressed in the popular media and some academic literature about the cost implications for the health care system of population projections which show a disproportionate increase in the growth rate of the elderly in Canada. The "greying" of Canadians<sup>1</sup> has also been seen by health policy makers and planners as posing a significant fiscal challenge for the health care system. An analysis of demographic trends appears to support the concern expressed as seniors are increasingly heavy users of the health care system as they become older.<sup>2</sup>

Figure 1-1 presents a schematic and a table of key projected changes in population distributions for Canada for the period 1996 to 2016. It should be noted that the cumulative growth rate of the "old-old", that is, those 85 years of age and older, will significantly exceed that of the general population over the coming years. Thus, over time, those aged 85+ will become an increasingly larger percentage of seniors; in other words, the 85+ population will increase as a percentage of the 65+ population.<sup>3</sup>

According to the 1996 census there were 3.6 million seniors aged 65+ in Canada, 10 percent of whom were 85 years of age or older. While the overall dependency ratio (those aged 0-14 and 65+ as a percentage of the population 15-64 years of age) will be about the same in 2016 as it was in 1996 (48.5 to 48.0 respectively), the dependency ratio for seniors will increase from 18.1 in 1996 to 23.6 in 2016 while the dependency ratio for children will decrease from 30.0 to 24.9 over the same period.

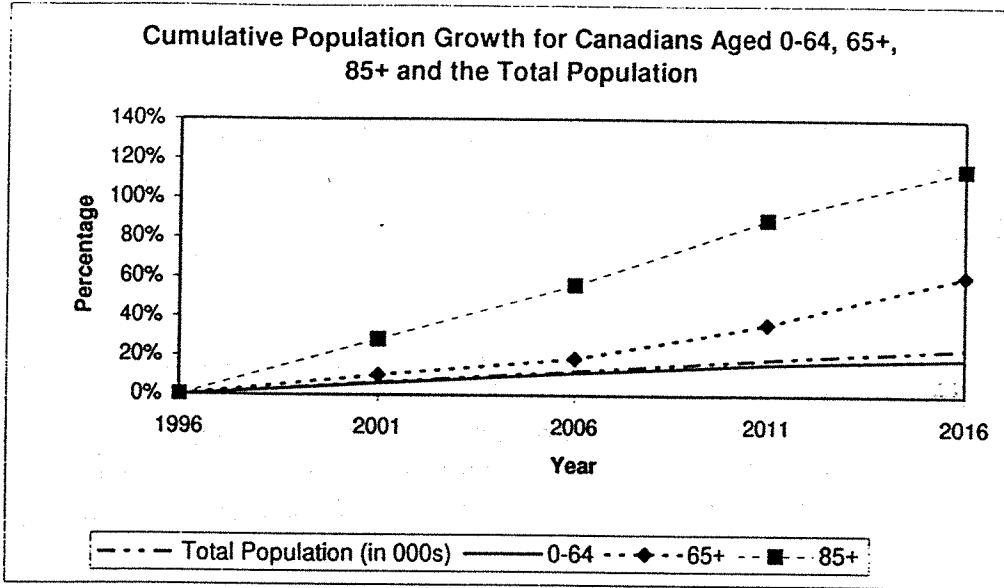
Policy makers and planners have taken note of these changes, but other factors should also be considered. Barer, Evans, Hertzman and Lomas (1987) note that demographic shifts have only accounted for a small proportion of the increase in health care costs. They estimate that demographic changes will only increase health costs by one percent per year over the next 40 years. Evans (1984), in his now classic book on health economics, has noted that governments in Canada can exercise supply-side constraints such as the closure of hospital beds or the decision not to build additional beds. Fries (1989) has stated that in the future, people will live healthier lives and their need for

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<sup>1</sup>The issue of the impact of changing demographics has been a popular theme of late. The person who so far seems to have had the greatest popular impact with this theme is David Foot (1996) with his book *Boom, bust and echo*, co-authored by Daniel Stoffman.

<sup>2</sup>Hollander and Pallan (1995) provide a table of utilization rates by age. This table reveals, for example, that the utilization rate for females in long term care facilities in British Columbia was some 23 times higher for those 85 years of age or older than for those 65-74 years of age in the 1988/89 fiscal year.

<sup>3</sup>These projections are based on 1991 census data using Statistics Canada's Projection 2, a status quo trend projection. They seem to be quite accurate, at least for the period from 1991 to 1996. The 1996 census found that the population of Canada was 29,963,600 (the projection based on the 1991 census was 29,963,700), *Census of Canada, 1996*. (1997).



|                             | 1996     | 2001     | 2006     | 2011     | 2016     |
|-----------------------------|----------|----------|----------|----------|----------|
| Total Population (in 000s)  | 29,963.7 | 31,877.3 | 33,677.5 | 35,420.3 | 37,119.8 |
| Cumulative % Increase       | .        | 6.4%     | 12.4%    | 18.2%    | 23.9%    |
| 0-64 years of age (in 000s) | 26,305.8 | 27,846.6 | 29,278.3 | 30,439.1 | 31,225.5 |
| Cumulative % Increase       | .        | 5.9%     | 11.3%    | 15.7%    | 18.7%    |
| 65+ years of age (in 000s)  | 3,657.9  | 4,030.7  | 4,339.2  | 4,981.2  | 5,894.3  |
| Cumulative % Increase       | .        | 10.2%    | 18.6%    | 36.2%    | 61.1%    |
| 85+ years of age (in 000s)  | 371.2    | 475.9    | 579.5    | 703.1    | 798.2    |
| Cumulative % Increase       | .        | 28.2%    | 56.1%    | 89.4%    | 115.0%   |

|                  |      |      |      |      |      |
|------------------|------|------|------|------|------|
| Median Age       | 35.1 | 37.0 | 38.4 | 39.5 | 40.4 |
| Dependency Ratio |      |      |      |      |      |
| 0-14             | 30.0 | 28.2 | 26.4 | 25.1 | 24.9 |
| 65+              | 18.1 | 18.6 | 19.0 | 20.5 | 23.6 |
| Total            | 48.0 | 46.8 | 45.4 | 45.5 | 48.5 |

Source: George, M.V. and Demography Division, Statistics Canada. (1994). *Population projections for Canada, provinces and territories: 1993-2016*. Ottawa: Statistics Canada.

**Figure 1-1: Population Growth Statistics (1996-2016)**

health services will be "compressed" into the last few years of life. This would reduce the rate of utilization of health services by the elderly.

### Rationale for This Study

Over the past decade there has been a growing interest by policy makers and planners in the potential use of home care services as a substitute for acute care and long term care residential services in Canada.<sup>4</sup> The interest in home care has also led to greater coverage of this topic by the popular media in Canada.<sup>5</sup>

There is still some question, however, about whether or not home care can indeed be a cost-effective alternative to residential care. Due to the work of William Weissert at the University of Michigan and others (discussed in Chapter 4), there seems to be a consensus in the United States among researchers, policy makers and planners that it is not cost-effective to substitute home care for care in an institution. This belief has gained such credence that in a recent call for research proposals on policy in aging in the United States, by the Robert Wood Johnson Foundation, it was taken as a given that home care can not be a cost-effective substitute for care in an institution. The Request for Proposal states, "the old rationale that increasing home care benefits pays for itself by keeping people out of nursing homes is no longer tenable, given research findings to the contrary" (Robert Wood Johnson Foundation, 1996, p. 4).

Canadian writers have begun to challenge the notion that home care is not cost-effective, at least compared to care in a hospital. Research by Philip Jacobs in Alberta (Jacobs, Hall, Henderson and Nichols, 1995) demonstrates that home care may be a cost-effective alternative to care in an acute care hospital, at least for some situations, such as for persons recovering from surgery. In addition, the Saskatchewan Health Services Utilization and Research Commission (HSURC) (1998) recently released the results of their study on the cost-effectiveness of home care versus acute care.

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<sup>4</sup>Due to economic restraint, or consideration of demographic trends, or both, policy makers and planners started to consider the potential of home and community based services as alternatives to residential services. British Columbia is believed to be one of the earliest provinces to do so. Due to the major recession of the early 1980s in BC (documented by Cutt, 1989 and Prince, 1996a), it was decided to freeze new construction of long term care facilities for an unspecified time in the early 1980s. This freeze was not lifted until the early 1990s. Thus, BC came to rely strongly on home and community based services during the 1980s. In the late 1980s, the author received a call from the Executive Director of the Centre local de services communautaires (CLSC) in Notre-Dame-de-Grâce/Montréal-Ouest (NDG) who was involved in long term care planning activities with the Ministry of Health and Social Services in Québec. At that time planners were considering the possibility of substituting community care for residential care but senior bureaucrats and politicians felt strongly that this would be an add-on cost and not a substitution. This writer explained that there had indeed been a substitution effect in British Columbia, at a systems level.

<sup>5</sup>The most recent example of this is the series of articles about home care in *The Globe and Mail* (March 20, 22, 27 and 29, 1999) by journalist André Picard.

They found that, on average, there was a potential savings of over \$800 per client cared for in the home. Preliminary work by this writer has raised the possibility that home care can, under certain conditions, be a cost-effective alternative to care in long term care facilities (Hollander, 1994). The topic of home care is now also on the federal/provincial agenda as the federal Liberal government has pledged itself to take some action in this area, starting with research and pilot projects. It has also recognized the cost burden that home care may entail for family members who are caring for elderly or disabled loved ones by instituting a new caregiver tax credit effective as of 1998.<sup>6</sup>

### Relevance of This Study

In Canada there are three major models of home care:

- **The acute-care substitution model**, where home care meets the needs of people who would otherwise have to remain in, or enter, acute-care facilities;
- **The long-term-care substitution model**, where home care meets the needs of people who would otherwise require institutionalization; and
- **The maintenance and preventive model**, which serves people with health and/or functional deficits in the home setting, both maintaining their ability to live independently, and in many cases preventing health and functional breakdowns, and eventual institutionalization.

(Federal/Provincial/Territorial Subcommittee on Long Term Care, 1990, p. v)

Given that Canadian writers (Jacobs et al., 1995; HSURC, 1998) are analysing the cost-effectiveness of the Acute Care Substitution Model and, that Weissert's paper on this topic (Weissert, 1985) deals primarily with the Long Term Care Substitution Model, this study will examine the issue of whether or not home care for the elderly can be a cost-effective alternative to care in a long term care facility, for government funders. That is, it will focus on model number two, the Long Term Care Substitution Model.

This study may be of relevance to a number of groups involved in the continuing care sector. Study results may be of interest to provincial ministries of health and to regional boards in deciding how to structure their service delivery systems, and to community groups and individuals in lobbying for more efficient and effective services.

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<sup>6</sup>The Caregiver Tax Credit came into effect for the 1998 fiscal year. The maximum personal amount of the claim is a \$400 tax credit or a combined federal and provincial credit of about \$600 per year for British Columbians. To be eligible for the credit the disabled person has to live with the person paying tax, be resident in Canada, and for 1998, have an income of no more than \$11,500.

This study may also be of significance to planners and decision makers in the United States and other countries. For example, many of the states near the Canadian border have had relatively high rates of institutionalization for long term care.<sup>7</sup> The results of this study could generate discussion among American policy makers about the way health services are structured and financed in the United States. The likely immediate relevance, however, will be for policy makers, clients, community advocates, and service providers involved with continuing care in the provincial and territorial health systems across Canada.

### **The Research Question**

The primary research question for this study is the following:

In the British Columbia continuing care sector, is home care for the elderly a cost-effective alternative for government funders to care in long term care facilities, by level of care?

The main analysis related to this question will focus on the period from the 1983/84 fiscal year to fiscal 1993/94. This is done for two reasons. First, this was a relatively stable period in terms of the structure and policies of the Continuing Care Division. Some changes started to be made in the 1994/95 fiscal year as a response to regionalization and other factors. The second reason is that the data required to analyze the situation after the 1993/94 fiscal year, in a way that is consistent with the analysis in this study, are not yet available.

### **Overview of This Study**

Chapter 2 presents an overview of the continuing care service delivery system in British Columbia. It also defines the way the major terms for continuing care services are used across Canada.

Chapter 3 presents an overview of the development of health and social services, and continuing care. It provides a context for the origins, development and current status of continuing care in Canada and places the evolution of the various components of continuing care into the context of the *Canada Health Act* and the *Canada Assistance Plan (CAP)*. (The CAP, though now replaced by the *Canada Health and Social Transfer (CHST)*, was the operative social welfare law

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<sup>7</sup> In 1989 the British Columbia utilization rate of long term care and extended care beds for people 65 years of age or older was 63 beds per 1,000. While the average for the same year in the United States for Medicare enrollees (also seniors) was 53.6, many of the colder and/or border states had much higher rates. For example, the following states had rates greater than 75 beds per 1,000 senior 65 years of age or older: Indiana, Minnesota, Wisconsin, Iowa, Kansas and Nebraska. However, a few southern states such as Oklahoma also had high rates while a few border states such as New York had quite low utilization rates (Hollander, 1989).

over the period being studied). This historical review reveals that continuing care services have antecedents in both health and social services. It also points out an ongoing tension between the universal nature of health services and the residual welfare model which dominates much of current social policy. These two competing models of social policy have a direct impact on continuing care services.

Chapter 4 presents a literature review of the cost-effectiveness of continuing care services. The literature review reveals that there is relatively little evidence to support the contention that home care is a cost-effective alternative to care in long term care facilities. Nevertheless, there is a modest literature that argues the opposite. It may be that the way service delivery systems are structured has an impact on cost-effectiveness, but there is almost no literature on the comparative cost-effectiveness of different models of service delivery. These findings highlight the potential contribution of this study. Appendix A to this study provides an overview of the methods of economic evaluation and the application of these methods to studies of continuing care services.

Chapter 5 provides an overview of the context for the analysis in this study. It addresses the issues of the stability of continuing care services, the analytical approach adopted and the methods used.

Chapter 6 provides a detailed empirical analysis of the cost-effectiveness of home care services compared to residential long term care services in British Columbia (BC). It shows that health care costs are about one half to three quarters as much for home care clients as for clients in residential long term care, by level of care. However, this proportion varies. The costs are about half of the costs for residential care for home care clients who are stable. However, the costs for home care clients who die are greater than for residential clients who die. It is also noted that hospital costs account for about half of the overall health costs for home care clients and that costs are greater at the transition points where there is a change in the client's type or level of care.

Chapter 7 provides a discussion of the key findings of the study. A comparison is provided of the findings in this study with the findings in the literature, particularly the American literature. A case study is presented about how to effectively substitute home care for residential care in a real world setting. The chapter concludes with a discussion of the implications of the findings of this study for future research.

Chapter 8 provides a discussion of the implications of study findings for a series of potential, future policy agendas regarding: the organization and management of continuing care services; legislation and administrative policy; service delivery; resource allocation; information systems; and research.



## CHAPTER 2: CONTINUING CARE SERVICES

### Introduction

The first part of this chapter provides a brief overview of the development of continuing care, and its key components, and attempts to clarify the terminology in this field in Canada. The second part of the chapter provides a description of the British Columbia continuing care system as it was constituted from the 1983/84 fiscal year to the 1993/94 fiscal year, the primary period of inquiry for this study.

### An Overview of Continuing Care Services in Canada

#### Setting the Context

Continuing care services have developed over time and have important historical roots in the evolution of health and social policy in Canada. This chapter provides an overview of continuing care services. Chapter 3 provides an overview of the inter-relationships of continuing care to health and social policy in Canada.

Given its historical roots, continuing care has evolved differently in each of the provinces and territories of Canada. While there is a considerable amount of commonality, there are also important differences in the organization of services, the policies adopted, and the terminology used, across jurisdictions. This section provides a general overview of how continuing care services were organized and what terminology was used from the mid-1980s to the mid-1990s. With the advent of regionalization in the mid-1990s, there continues to be an evolution of organizational models and terminology for continuing care across Canada.

It is important to note that continuing care is not, in fact, a type of service, such as hospital care or physician services, but a complex "system" of service delivery. This system has a number of components and is integrated conceptually as well as in practice through a "continuum of care." The efficiency and effectiveness of the system depends not only on the efficiency and effectiveness of each component, but also on the way that the service delivery system itself is structured. This point has been made in the document *Future Directions in Continuing Care*, which states:

Continuing care is multifaceted and combines aspects of both health and social services. Unlike hospital care or physician services, varied as they may be, continuing care is an amalgamation of diverse categories of service. These different categories of service are integrated by an overall "system" of service delivery. Thus...it is important to remember that continuing care is not a type of service, but a system of service delivery [emphasis in original]. The efficiency and effectiveness of that system is based not only on its constituent parts, but also on the nature of the system itself.

The core elements of the continuing care system are summarized in Tables 2-1 and 2-2. There continue to be differences in the nature and scope of continuing care service delivery systems across Canada. Table 2-3 provides a summary of other service components, which could be included in a comprehensive continuing care system.

Figure 2-1 presents a schematic overview of the history and current status of the continuing care system in Canada. Prior to the late 1970s, the components of what is now continuing care were generally housed in three separate areas, acute care, public health and social services. This system of delivering services relied on coordination mechanisms between these three separate and distinct organizational entities, which were typically housed in different divisions and/or different ministries of government. The new system, which emerged in the mid-1970s and the 1980s, is one in which a range of different services is integrated within one service delivery system in one branch or division. This allows for system-wide planning, policy making, administration and care provision. As noted in Figure 2-1, assessment and treatment centres, day hospitals, and chronic care hospitals, come from the acute care tradition. Long term care facilities originated from charitable hospitals, poorhouses, and other social welfare oriented services. They are now often combined, administratively, with other institutional services in jurisdictions where there is a split between residential and community based services. The home nursing care and rehabilitation components of continuing care were originally rooted in public health and are now often referred to as home care services. Like long term care facilities, home support services were originally in the social services sector.

#### Understanding Service Delivery Systems: The Emergence of Four Common Terms

Continuing care continues to evolve and there is considerable lack of clarity with regard to key terms. Four umbrella terms which have been used to describe systems of service delivery require clarification: *continuing care*, *long term care*, *home support*, and *home care*.<sup>8</sup> *Continuing care* is a term which is generally used to describe a system of service delivery which includes all of the services provided by long term care, home support and home care. This term reflects within it two complementary concepts, that care may "continue" over a long period of time and that an integrated program of care "continues" across service components, that is, that there is a continuum of care.

In a few instances, the term *continuing care* has also been used to refer to a set of services which include community based long term care services and home care services but exclude residential long term care services. This definition of the term *continuing care* was used in Manitoba in the 1980s and in Newfoundland in the early 1990s. Historically, a distinction was sometimes made such that the term *long term care* was used to describe a range of institutional services,

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<sup>8</sup>The following discussion relates to the way terms were used from the mid-1980s to the mid-1990s. While this discussion is still pertinent today, the advent of regionalization is bringing about a more complex pattern and a wider range of terms. For a more detailed overview of how services are organized across Canada in the late 1990s, the reader is referred to Hollander and Walker (1998).

Table: 2-1

The Core Components of the Continuing Care Service Delivery System: Community Based Services

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Community Care

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- **Assessment and Case Management Services** constitute a process of determining care needs, admitting clients into service and providing for the ongoing monitoring of care requirements, including the revision of care plans as necessary.
- **Meals-on-Wheels** is a voluntary community service that provides and delivers a hot nutritious meal to the client's home. The goal of Meals-on-Wheels is to supplement a client's diet by delivering an attractive nourishing meal to help maintain or improve health.
- **Homemaker Services** are provided to clients who require non-professional (lay) personal assistance with care needs or with essential housekeeping tasks. Personal assistance needs may include help with dressing, bathing, grooming, and transferring, whereas housekeeping tasks might include activities such as cleaning and meal preparation.
- **Home Nursing Care** provides comprehensive nursing care to people in their homes. A home nursing care program coordinates a continuum of services designed to allow clients of all ages to remain in their homes during an acute or chronic illness. This community-based program provides one-to-one nursing care in the client's own environment. Home nursing care encourages clients to be responsible for, and to actively participate in, their own care. Goals for nursing care can be curative, rehabilitative, or palliative.
- **Community Physiotherapy and Occupational Therapy Services** provide direct treatment and consultative and preventative services to clients in their homes, arrange for the necessary equipment to cope with physical disability, and train family members to assist clients. Community physiotherapy and occupational therapy programs also typically provide consultative, follow-up, maintenance, and educational services to patients, families, physicians, public health staff, hospitals, and nursing homes.
- **Adult Day Care Services** provide personal assistance, supervision and an organized program of health, social and recreational activities in a protective group setting. The program is designed to maintain persons with physical and/or mental disabilities, or restore them to, their personal optimum capacity for self-care. Adult day care centres may be established within a residential care facility or may be located in a freestanding building.
- **Group Homes** are independent private residences which enable persons with physical or mental disabilities to increase their independence through a pooling of group resources. They must be able to participate in a cooperative living situation with other disabled individuals. This type of care is particularly suitable for disabled young adults who are working, enrolled in an educational program, or attending a sheltered workshop.

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Source: Adapted from Federal/Provincial/Territorial Subcommittee on Continuing Care. (1992). *Future Directions in Continuing Care*. Ottawa: Health and Welfare Canada, pp. 25-27.

Table: 2-2

The Core Components of the Continuing Care Service Delivery System: Residential Services

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Residential Care

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- **Long Term Care Residential Facilities** provide care for clients who can no longer safely live at home. Residential care services provide a protective, supportive environment and assistance with activities of daily living for clients who cannot remain at home due to their need for medication supervision, 24-hour surveillance, assisted meal service, professional nursing care and/or supervision.
- **Chronic Care Units/Hospitals** provide care to persons who, because of chronic illness and marked functional disability, require long-term hospitalization but do not require all of the resources of an acute, rehabilitation or psychiatric hospital. Twenty-four hour coverage by professional nursing staff and on-call physicians is provided, as well as care by professional staff from a variety of other health and social specialities. Only people who have been properly assessed and who are under a physician's care are admitted to chronic care facilities. Care may be provided in designated chronic care units in acute care hospitals or in stand alone chronic care hospitals.
- **Assessment and Treatment Centres and Day Hospitals** provide short-term diagnostic and treatment services in a special unit within an acute care hospital. These centres provide intensive assessment services to ensure that elderly persons with complex physical and psychiatric disorders are correctly assessed and treated. The objective of the centres is to assist the client to achieve and maintain an optimal level of functioning and independence. Centres may have beds for inpatient assessment and treatment, a day hospital service, and/or an outreach capability that permits staff to assist clients in care facilities or in their homes.

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Source: Adapted from Federal/Provincial/Territorial Subcommittee on Continuing Care. (1992). *Future Directions in Continuing Care*. Ottawa: Health and Welfare Canada, pp. 25-27.

Table: 2-3

Examples of Additional Services Which May be Included in the Continuing Care System

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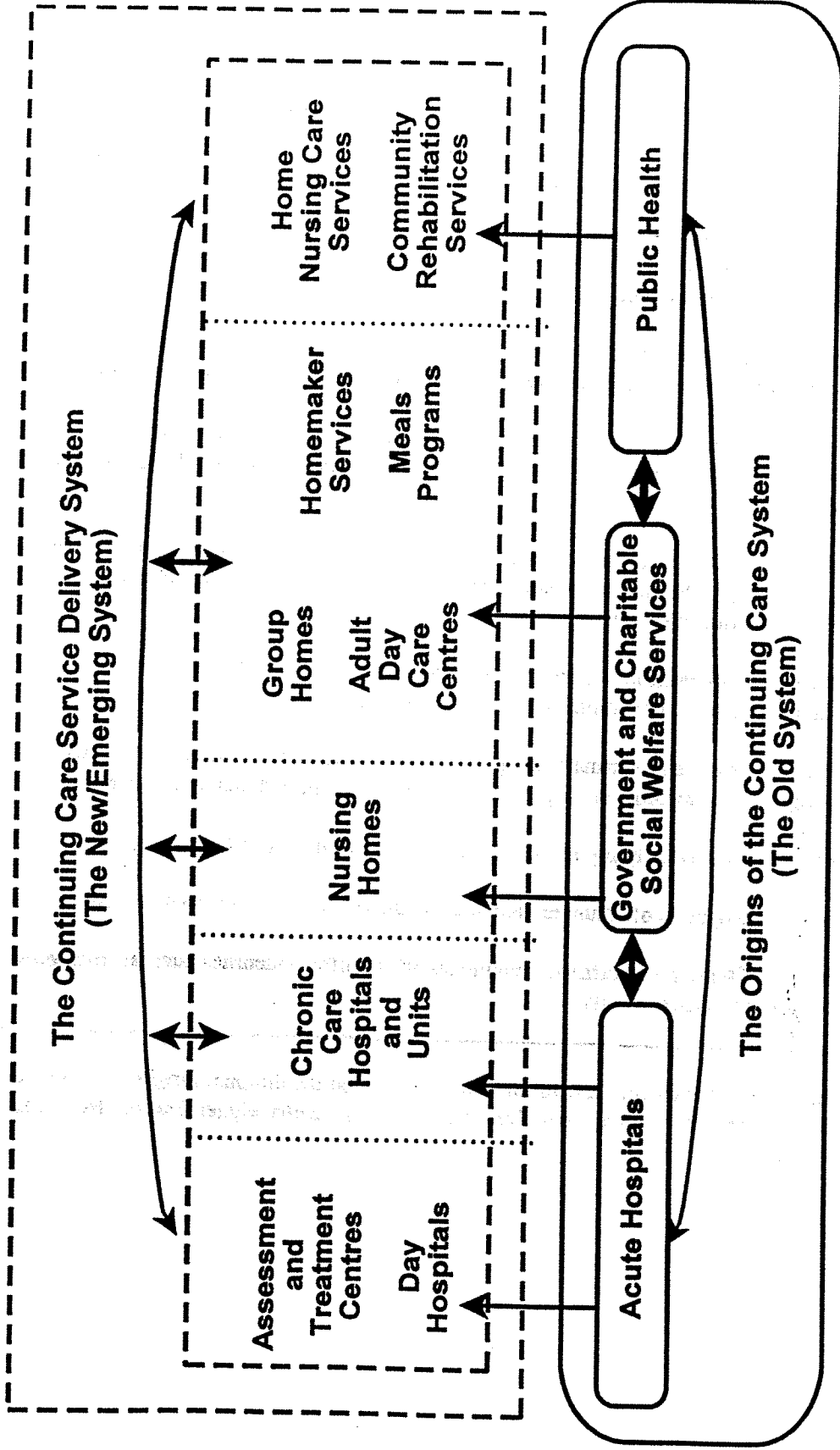
Other Services

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- **Equipment and Supplies** may be provided as required to maintain a person's health, e.g., medical gases, assisted breathing apparatus, and to improve the opportunities for self-care and a better quality of life, e.g., wheelchairs, walkers, electronic aids, etc. Equipment may be loaned, purchased or donated.
- **Transportation Services** may be provided to the disabled to allow them to go shopping, keep appointments and attend social functions. Many vehicles are adapted for wheelchairs and other devices.
- **Support Groups** may be initiated by many sources, e.g., community and institutional services, friends and families of clients, and clients having similar disabilities. The groups provide psychological support and foster mutual aid.
- **Crisis Support** may be available in the community to give emergency assistance when existing arrangements break down, e.g., illness of the spouse caring for a disabled person, which could include emergency admission to institutional care.
- **Life and Social Skills for Independent Living** may provide retraining and support for independent living, and for social and personal development, in group settings or on an individual basis.
- **Respite Services** may be provided to primary caregivers to give them temporary relief by providing a substitute for the caregiver in the home or by providing alternate accommodation to the client.
- **Palliative Care** may be provided to dying persons in their homes or in residential settings.
- **Volunteers** may provide programs of volunteer help that are utilized in most aspects of long term care.
- **Congregate Living Facilities** are apartment complexes which offer amenities such as emergency response, social support and shared meals.

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Source: Adapted from Federal/Provincial/Territorial Subcommittee on Institutional Program Guidelines. (1988). *Assessment and Placement for Adult Long Term Care: A Single Entry Model*. Ottawa: Health and Welfare Canada, pp. 31-33.



Source: Hollander, 1994, p. 10

Figure 2-1: The Origins and Current Status of the Continuing Care System



primarily for the care of the elderly, and the term *home care* was used to describe home based services provided primarily by nurses and other professionals such as physiotherapists.

As social welfare related services were added to the mix, a number of different patterns emerged. One pattern was that social welfare services, for those who needed care for "a longer period of time," were added to long term care and came to constitute a home and community based type of long term care. These services were designed to provide care for both the disabled and the elderly. Therefore, group homes for younger disabled persons were added to long term care. Adult day care services were also added as were home based services such as homemakers and meals-on-wheels. Professional nursing and rehabilitation services remained separate, but were eventually included within a larger *continuing care* umbrella. This was the pattern in British Columbia. In this type of system the term *community based services* is generally used to refer to all community and home based continuing care services. No home care program *per se* exists in this model.

One of the more typical patterns is that the term *long term care* is used to refer only to residential services. In this model, adult day care services operating in long term care facilities may be considered to be part of residential *long term care* services because they are provided in an institutional setting. In this type of system, home care services often expand from their core base to include home based home support services such as homemakers. Therefore, in a number of jurisdictions, there is a split between long term care residential care and home care (that is, home based care). The responsibility for community based services such as adult day care centres and group homes may vary across jurisdictions or may be split within a given jurisdiction. Facility based adult day care centres may be in long term care, for example, while stand-alone centres may be in home care. Some jurisdictions recognize a distinction between home support and home care services.

The term *long term care* also has a second, very different meaning. This term has come to refer to both residential and community based services and has come to have a meaning similar to the term *continuing care*. This usage was reflected in the establishment in 1986 of the Federal/Provincial/Territorial (F/P/T) Subcommittee on Long Term Care which combined the former F/P/T Subcommittee on Home Care and an interprovincial committee on long term care. When this Subcommittee was established, it defined *long term care* as follows:

Long-term care represents a range of services that address the health, social and personal care needs of individuals who, for one reason or another, have never developed or have lost some capacity for self-care. Services may be continuous or intermittent, but it is generally presumed that they will be delivered for the 'long term' that is, indefinitely to individuals who have demonstrated need, usually by some index of functional incapacity.

(Federal/Provincial/Territorial Subcommittee on Institutional Program Guidelines, 1988)

This definition includes residential long term care services, community and home based long term care services, that is, home support, and longer-term home care services.

Home and community based long term care services, generally provided by persons other than professionals such as nurses or rehabilitation therapists (e.g., homemakers), are often referred to as *home support* services, even though some of these services are provided in the community. Adult day care and group home services are community based *home support* services. Going to adult day care centres provides support to people living at home by providing needed health services and the opportunity for socializing. In addition, adult day care services can provide a period of respite for family caregivers. In group homes, individuals typically pay for the room and board component of care in their "home" and only the care component of services is paid for by government, thus providing home support for persons in group-living situations.

What about *home care* services, how have they been defined? A working group on home care was established under the F/P/T Subcommittee on Long Term Care to review the major issues in home care. Their report recognized the conceptual confusion around the term *home care* and stated that "...there is no precise and universally accepted definition...Home care therefore has different meanings in different places" (F/P/T Subcommittee on Long Term Care, 1990). The report goes on to note that there are three distinct models of home care: the acute care substitution model, the long term care substitution model, and the maintenance and preventive model (these models were defined in Chapter 1).

Organizational arrangements in the continuing care sector continue to be in a state of flux. Most provinces and regional health authorities are reviewing the way such services are organized, and changes continue to be made. For purposes of this study the terms *home care* and *home/community care* will be used to refer to all home and community based home support and home care services.

## The British Columbia Continuing Care System

### Introduction

British Columbia took advantage of new federal/provincial fiscal arrangements enacted in 1977 to enhance the care of the elderly and disabled. On January 1, 1978, the British Columbia Ministry of Health initiated the Long Term Care Program. The program integrated the many components of existing social and health services for the handicapped, the infirm and the elderly into a single comprehensive range of care services. The philosophy of the program emphasized the role of the family and the community by involving the family wherever possible and by providing services only to the extent that the individual and his or her family were unable to cope within their own resources.<sup>9</sup>

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<sup>9</sup>The following discussion is based on the work of this writer. He served as the Director of Programs in the BC Continuing Care Division during 1984 and 1985 and was the Acting Executive Director for the first six months of 1986. In 1985, the then Deputy Minister of Health, Stan Dubas, asked this writer to prepare an overview of the continuing care system in British Columbia. That paper was revised by the writer several times, culminating in a publication in an international journal (Hollander and Pallan, 1995). Prior to the



In 1980, the Community Physiotherapy Program (renamed the Community Rehabilitation Program in 1993) and the Home Nursing Care Program (renamed the Community Home Care Nursing Program in 1993) were transferred from Preventive Programs of the Ministry of Health. This expanded organization came to be known as the Home Care/Long Term Care Program. In October 1983, the organization was renamed the Continuing Care Division to highlight the ongoing, or continuing, nature of the care provided and to emphasize that the Division provided a continuum of supportive health care services from community care to residential care. The Continuing Care Division was disbanded as a separate entity in 1997 during a major reorganization of the British Columbia Ministry of Health. At that time an Assistant Deputy Minister position for Acute and Continuing Care was established.

The Continuing Care Division (during 1983-1994) was a decentralized professional organization with its central office in Victoria providing overall administration, policy direction and control. All programs were delivered at the community level through 16 provincial Health Units, four Municipal Health Departments and one Regional District. Continuing Care Managers were based in each of these 21 health jurisdictions. These officials were responsible for the coordination and administration of the Division's programs in the local community.

In the Continuing Care Division, services were delivered from three programs: the Long Term Care Program; the Community Home Care Nursing Program; and the Community Rehabilitation Program. The latter two programs were jointly referred to as Direct Care or Clinical Services Programs (at different points in time). Long term care assessment and case management, home nursing services, and rehabilitation services were provided directly by provincial or municipal government employees. All other services were provided through the purchase of service from not-for-profit, or for-profit, service provider agencies external to the Ministry of Health.

The Continuing Care Division operated legislatively through the *Supply Act* and did not have its own legislation until the passage of the *Continuing Care Act* in 1989 (the Act came into force on July 1, 1990). In 1984 the Continuing Care Division had an Executive Director who reported to the Assistant Deputy Minister of Institutional Services, a Director of Support Services, who was responsible for finance, personnel, facilities development, and other administrative matters, and the Director of Programs (the position held by this writer) who was responsible for all aspects of service delivery. As more funding became available in 1986, it was decided to reorganize the Division and break up the Director of Programs position into five Regional Director positions. Each Director was responsible for a region and a functional area such as assessment and case management, facility services, home support services, clinical services (home nursing care and rehabilitation) and planning and evaluation. This model remained in place until 1994 when central office responsibility for home

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preparation of the first overview, there was no detailed and integrated description of the BC continuing care service delivery system and how its component parts were interlinked. There were general descriptions of services, and policies were noted in a policy manual. There was interest in the BC continuing care system in the early 1980s by Robert and Rosalie Kane, internationally recognized gerontologists from the United States. They published overviews of the BC model (Kane and Kane, 1985a, 1985b) but these overviews were fairly descriptive. The schematic of how services are actually integrated (Figure 2-2) was developed by this writer.

nursing care and rehabilitation was transferred to the Hospital Programs Division.

In the 1985/86 fiscal year there were some 19,788 clients who received service in personal and intermediate care facilities. As there was a freeze on new bed construction until the early 1990s, the number of individuals cared for in long term care facilities remained relatively constant over time. During fiscal 1985/86, some 40,884 clients received homemaker service and 30,257 received home nursing care (these are not unique clients; each client is counted once for each type of service). The comparable figures for clients receiving homemaker and home care nursing services in fiscal 1991/92 were 59,210 and 39,265 respectively. These figures show a significant increase in the number of people receiving community based care.<sup>10</sup> The number of individuals in personal and intermediate care facilities in fiscal 1991/92 was 19,496, a slight drop compared to fiscal 1985/86.

The budget for continuing care, as noted in the *Estimates*, dropped from \$335.2 million in fiscal 1982/83 to \$312.8 million in fiscal 1984/85. During this period there were reductions in funding for facility care, homemaker services and adult day care. Home nursing care budgets remained fairly constant and funding for assessment, group homes for the handicapped and physiotherapy increased. Table 2-4 presents how budgets (in millions) increased between the 1984/85 and 1992/93 fiscal years (1992/93 was the last year in which the *Estimates* provide separate breakdowns for continuing care services). This percentage increase for continuing care of 123.4 percent is higher than that for hospital care of 93.7 percent for the same period. The percentage increase of the voted expenditures for the overall Ministry of Health was 129.7 percent for this same period.

### An Overview of the System

The Long Term Care Program and the two Clinical Services Programs were complementary and offered clients coordinated services. The components of referral, assessment, determination of eligibility, development of a service plan, reassessment of need, and client discharge from the system were similar for all three programs. Referrals to all three programs could be made by any relevant party such as a health professional, family member, friend or other such person. While the structure at the Ministry level has changed, the overall model of care, as practised in the regions, still seems to be fairly similar to the model in place in 1994. Thus, the remainder of this text will be written in the present tense.

When a potential client is referred to one of the programs, health care professionals in that program review the referral and determine if basic need and eligibility requirements are met. If not

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<sup>10</sup>During the recession of the early to mid-1980s the Continuing Care Division was still able to increase the community care case load, in spite of declining revenues by, over time, reducing the average hours of care received per client, consistent with client needs. This was a significant accomplishment given that the budget estimate figures for homemaker services dropped from \$57 million in fiscal 1982/83 to \$48.5 million in fiscal 1984/85. From about 1987 there were more substantial budget increases which allowed for growth. The figures quoted for the 1985/86 and 1991/92 fiscal years are from the BC Ministry of Health Annual Reports (pages 43-44 for the 1985/86 Annual Report and pages 37-38 for the 1991/92 Annual Report).

Table: 2-4

A Comparison of Changes in Funding for the Continuing Care Division: 1984/85 to 1992/93

| CONTINUING CARE                    | 1984/85<br>(Millions of \$) | 1992/93<br>(Millions of \$) | Percentage<br>Increase |
|------------------------------------|-----------------------------|-----------------------------|------------------------|
| Program Management                 | 2.3                         | 6.9                         | 200                    |
| Residential Care                   | 204.1*                      | 434.3                       | 112.8                  |
| Group Homes                        | 2.3                         | 7.2                         | 213                    |
| Long Term Care Assessment          | 10.5                        | 20.8                        | 98.1                   |
| Home Support and Clinical Services | 72.8                        | 183.2                       | 151.6                  |
| <b>TOTAL</b>                       | <b>292</b>                  | <b>652.4</b>                | <b>123.4</b>           |

\*Government Institutions such as Skeenaview and Valleyview were closed or transferred out of continuing care in the mid-1980s and are not included in this estimate. (BC Ministry of Finance *Estimates* for fiscal 1984/85, p. 122 and fiscal 1992/93, p. 168)

met, the potential client is informed and, where appropriate, is referred elsewhere. If basic need and eligibility requirements are met, an in-depth assessment is conducted in which the client's abilities, disabilities, capabilities, and health care needs are assessed. Once needs are determined, a plan for the delivery of services including referral to other services within, and outside of, the Continuing Care Division is developed with the client and his or her family. In all programs, the care plan is developed in consultation with the client's physician. In the Long Term Care Program, however, the assessors/case managers are the gatekeepers of the system.<sup>11</sup> Thus, the Long Term Care Program is not a physician directed system. In the Clinical Services or Direct Care Programs, a physician's order is required to provide services for medical and post-surgical care; however, such an order is not required for services such as assessment, health teaching, counselling and service coordination.

For the majority of clients, services are implemented in one of two ways. The first way involves the implementation of residential or community based services through a service provider external to the Division. Services are either purchased or arranged on behalf of the client by the Long Term Care assessor/case manager. In some instances, home care nurses or rehabilitation therapists may also purchase external services on behalf of their clients. The second way is through the provision of in-home services by nurses and therapists through the Community Home Care Nursing and Rehabilitation Programs.

Reassessments and reviews of service need also occur in two ways. In the Long Term Care

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<sup>11</sup>The assessors/case managers are primarily registered nurses, although in some regions social workers and rehabilitation therapists may also perform this function. There has been relatively little turnover of staff over the past years and new staff are trained on the job by more experienced assessors/case managers.

Program, this reassessment is scheduled at regular intervals, although non-scheduled reassessments are conducted when need is demonstrated. In the Clinical Services Programs, reassessment is a continuous process. During each visit, the client's status is considered and any changes that affect the delivery of service are incorporated into the service plan. If a client is receiving services from more than one program, or type of provider, at any one time (for example, homemaker services through the Long Term Care Program and nursing services from the Community Home Care Nursing Program), every effort is made to coordinate the delivery of all services to the client.

The client leaves the system when services are no longer required. However, clients can continue to receive service from one program, or type of provider, after they no longer require service from another. The client remains in the system until no services are required from any program. After leaving, the client may be referred again, at any time, and the same sequence of events may be followed.

As part of the standard assessment process conducted by the assessors/case managers, long term care clients, both residential and community based, are categorized into one of five distinct levels of care. These are:

- Personal Care (PC): This level of care recognizes the person who is independently mobile with or without mechanical aids, requires minimal assistance with the activities of daily living, and requires non-professional supervision and/or assistance.
- Intermediate Care 1 (IC1): This level of care recognizes the person who is independently mobile with or without mechanical aids, requires moderate assistance with the activities of daily living, and requires daily professional care and/or supervision.
- Intermediate Care 2 (IC2): This level of care recognizes the need for more intensive care and/or supervision requiring additional care time. The basic characteristics of this level of care are the same as for Intermediate Care Level 1.
- Intermediate Care 3 (IC3): This level of care recognizes persons with dementia who may have severe behavioural problems on a continuing basis. However, this level of care may also be used for persons requiring more intensive care involving considerably more staff time than at the Intermediate Care 2 level but who are not eligible for extended care.
- Extended Care (EC): This level of care recognizes the person with a severe chronic disability which has usually produced a functional deficit which requires 24-hour-a-day professional nursing services and continuing medical supervision, but does not require all the resources of an acute care hospital. Most persons at this level of care have a limited potential for rehabilitation and often require institutional care on a permanent basis.

A schematic of the continuing care service delivery system is provided in Figure 2-2.

### Components of the Continuing Care System

Many of the components of continuing care, and their definitions, in Figure 2-2 were defined previously in Tables 2-1 to 2-3. The following provides definitions of the remaining services noted in Figure 2-2.

**Family Care Homes** are single family residences which accommodate a maximum of two long term care clients who require residential care. This is a type of adult foster care.

**Special Extended Care Units** for the behaviourally disordered are hospital units which provide a special program for residents who, because of serious disruptive (chronic, occasional or episodic) behaviours, are unable to be managed in the usual extended care or continuing care facility.

**Discharge Planning Units** are units in acute hospitals which receive elderly persons who have been transferred from regular hospital beds and whose discharge can be facilitated by providing a program of health services to aid recovery.

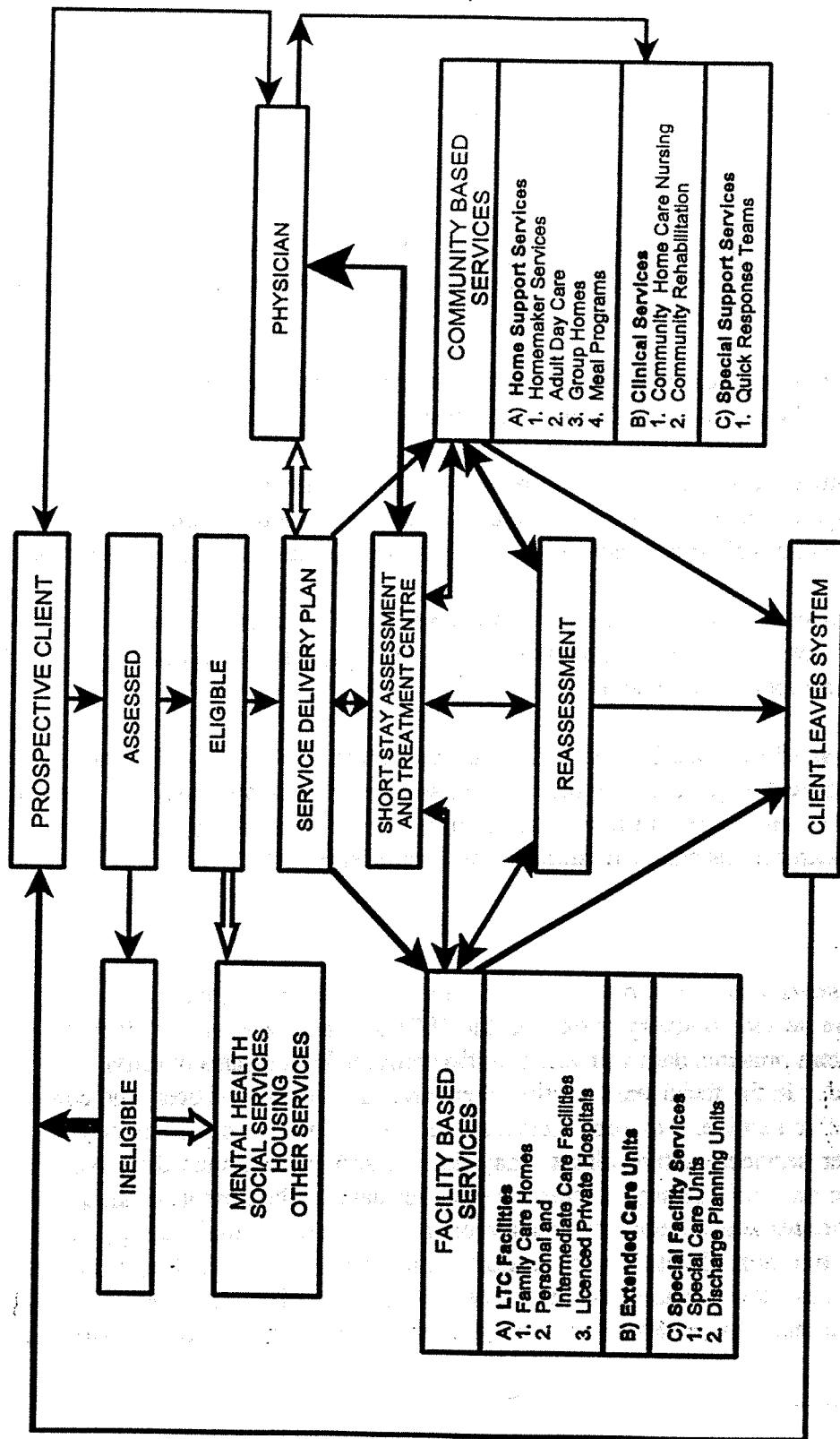
**Quick Response Teams** are located in hospital emergency departments. They review cases of elderly persons who are deemed to be eligible for admission to hospital by physicians to determine whether or not such persons can be returned to their homes, that is, can be diverted from the hospital back to their homes with the assistance of added home related services.<sup>12</sup>

### Service Utilization

Table 2-5 presents a statistical overview of the number of clients in each major component of the continuing care service delivery system in the 1991/92 fiscal year (April 1991 to March 1992). The first column presents data equivalent to that provided if a census of active clients was taken for an average day in the fiscal year. Active clients are those who have been, and continue to be, authorized to receive service. For some services, such as residential care, service is received every day. For other services, active clients may receive service less than daily, such as six homemaker visits per month. The second column provides data on the number of unique clients, that is, separate individuals who received services by program or by combinations of programs. For each program, or combination, clients are only counted once. Some 22,309 continuing care facility clients and 59,209 homemaker clients received services during the 1991/92 fiscal year. Overall there were 114,854 unique clients who received continuing care services of which 64 percent were females

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<sup>12</sup>For an extended discussion of the British Columbia continuing care system the interested reader is referred to the article by Hollander, M.J. and Pallan, P. (1995). The British Columbia continuing care system: Service delivery and resource planning. *Aging: Clinical and Experimental Research*, 7: 94-109. This article provides an overview of the BC Continuing care system and addresses a number of key issues such as the role of physicians, eligibility, user fees, waiting lists, quality assurance and case management.



1. Direct referral for medical and post-surgical care only

⇨ Consultation / Indirect Referral

Source: Hollander and Pallan, 1995, p. 97

Figure 2-2: The British Columbia Continuing Care System in 1993



Table: 2-5

Unique Clients by Age and Sex for the 1991/92 Fiscal Year (April 1991 - March 1992)

|   | Average Clients Per Day | Unique Clients Per Year | Sex     |        | Age Group |        |       |        |        |        |
|---|-------------------------|-------------------------|---------|--------|-----------|--------|-------|--------|--------|--------|
|   |                         |                         | Females | Males  | 0-19      | 20-44  | 45-64 | 65-74  | 75-84  | 85+    |
| Continuing Care Facilities  | 16,466                  | 22,309                  | 15,154  | 7,155  | 3         | 371    | 798   | 3,018  | 8,515  | 9,604  |
|   | % <sup>1</sup>          |                         | 67.93   | 32.07  | 0.01      | 1.66   | 3.58  | 13.53  | 38.17  | 43.05  |
| Extended Care Units   | 7,609                   | 10,429                  | 6,894   | 3,535  | 26        | 576    | 479   | 1,416  | 3,500  | 4,432  |
|   | %                       |                         | 66.10   | 33.90  | 0.25      | 5.52   | 4.59  | 13.58  | 33.56  | 42.50  |
| Total Residential   |                         | 31,367                  | 21,120  | 10,247 | 29        | 934    | 1,250 | 4,256  | 11,505 | 13,393 |
|   | %                       |                         | 67.33   | 32.67  | 0.09      | 2.98   | 3.99  | 13.57  | 36.68  | 42.70  |
| Homemakers  | 44,963                  | 59,209                  | 41,060  | 18,149 | 20        | 4,129  | 4,200 | 15,504 | 24,898 | 10,458 |
|   | %                       |                         | 69.35   | 30.65  | 0.03      | 6.97   | 7.09  | 26.19  | 42.05  | 17.66  |
| Adult Day Care  | 3,347                   | 5,772                   | 3,675   | 2,097  | 0         | 219    | 335   | 1,237  | 2,626  | 1,355  |
|   | %                       |                         | 63.67   | 36.33  | 0.00      | 3.19   | 5.80  | 21.43  | 45.50  | 23.48  |
| Group Homes   | 208                     | 286                     | 115     | 171    | 3         | 227    | 32    | 12     | 8      | 4      |
|   | %                       |                         | 40.21   | 59.79  | 1.05      | 79.37  | 11.19 | 4.20   | 2.80   | 1.40   |
| Long Term Care Community  |                         | 60,850                  | 41,933  | 18,917 | 23        | 4,374  | 4,339 | 15,870 | 25,500 | 10,744 |
|   | %                       |                         | 68.91   | 31.09  | 0.04      | 7.19   | 7.13  | 26.08  | 41.91  | 17.66  |
| Total Long Term Care, Residential and Community                       |                         | 87,148                  | 59,881  | 27,267 | 50        | 5,124  | 5,402 | 19,355 | 34,773 | 22,444 |
|   | %                       |                         | 68.71   | 31.29  | 0.06      | 5.88   | 6.20  | 22.21  | 39.90  | 25.75  |
| Community Home Care Nursing   | 9,202                   | 39,263                  | 21,751  | 17,512 | 1,385     | 7,987  | 4,988 | 9,802  | 10,912 | 4,189  |
|   | %                       |                         | 55.40   | 44.60  | 3.53      | 20.34  | 12.70 | 24.96  | 27.79  | 10.67  |
| Community Rehabilitation  | 2,694                   | 12,684                  | 8,020   | 4,664  | 407       | 1,561  | 1,179 | 3,052  | 4,431  | 2,054  |
|   | %                       |                         | 63.23   | 36.77  | 3.21      | 12.31  | 9.30  | 24.06  | 34.93  | 16.19  |
| Clinical Services   |                         | 46,993                  | 26,850  | 20,143 | 1,732     | 8,914  | 5,683 | 11,592 | 13,602 | 5,470  |
|   | %                       |                         | 57.14   | 42.86  | 3.69      | 18.97  | 12.09 | 24.67  | 28.94  | 11.64  |
| Total Community, Long Term Care and Clinical Services                 |                         | 89,785                  | 56,778  | 33,007 | 1,749     | 11,857 | 8,671 | 23,035 | 31,757 | 12,716 |
|   | %                       |                         | 63.24   | 36.76  | 1.95      | 13.21  | 9.66  | 25.66  | 35.37  | 14.16  |
| Total Residential and Community, Long Term Care and Clinical Services |                         | 114,854                 | 73,900  | 40,954 | 1,773     | 12,604 | 9,686 | 26,311 | 40,532 | 23,948 |
|   | %                       |                         | 64.34   | 35.66  | 1.54      | 10.97  | 8.43  | 22.91  | 35.29  | 20.85  |

<sup>1</sup>Percent sign refers to data in the columns for sex and age groups

Source: Hollander and Pallan, 1995, p. 100

and 36 percent were males. As noted earlier, the major growth from 1983 to 1993 occurred in home and community based services. This growth was such that utilization rates for home care continued to increase in spite of population growth for the community sector. However, during most of this same period, there was a moratorium on the construction of facility beds and, thus, bed utilization rates decreased.



## CHAPTER 3: THE EVOLUTION OF HEALTH SERVICES, SOCIAL SERVICES AND CONTINUING CARE SERVICES, IN CANADA

### Introduction

As a significant portion of the services within continuing care emerged from the social welfare sector, continuing care's development is embedded in the evolution of both health and social services in Canada. In social policy, there is a robust literature related to the history of income and employment support programs but relatively little on actual service delivery mechanisms such as group homes or homemaker services. Similarly, in the health sector much of what has been written focuses on the key milestones of the development and financing of hospitals and medical services. There is also some historical literature on public health. However, there is relatively little historical information on continuing care.

Richard Titmuss (1976) has noted that social welfare is part of a system of redistributing societal resources. He notes that there are three major types of redistribution: social welfare, fiscal welfare and occupational welfare.<sup>13</sup> Social welfare relates to the provision of income support (for example, old age pensions) or the provision of services in kind (hospital care). Titmuss argues that social welfare developed as a response to culturally determined dependencies which emerged with increased urbanization and industrialization. This, in turn, led to an increased division of labour and a differentiation of function. As shall be seen later in this chapter, this was the case for Canada.

Fiscal welfare refers to providing benefits to individuals, families, or groups through the tax system. The current federal Liberal government is using fiscal welfare as a social policy lever by providing tax breaks to persons caring for an elderly or disabled individual.<sup>14</sup> Occupational welfare relates to benefits provided by employers (for example, company pensions, sickness benefits).

Within social welfare one can discern three major categories of activity, the first two of which have particular relevance for the emergence of continuing care. The first type of activity relates to the protection of the public. Provisions were made at government expense, even in the early days of Canada, for matters related to the housing and feeding of "vagrants, offenders, the diseased and the insane." Private charities initially dealt with the other two activities. That is, they

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<sup>13</sup>Armitage (1996) notes that there are five different arguments which may be used to justify redistribution: (1) the need for something, for example, sick people need medical care; (2) insurance against risk, that is, insurance programs such as Employment Insurance which provide benefits in cash and hospital insurance which provides benefits in kind; (3) compensation against loss, for example, Workers Compensation; (4) investment in human potential, for example, retraining programs for the unemployed; and (5) economic growth, that is, it is argued that welfare expenditures will contribute to economic and social stability and growth.

<sup>14</sup>The consideration of greater use of fiscal welfare levers seems to have emerged in the Mulroney era but has continued, to some extent, in the Chrétien era perhaps as a method of maintaining a more active presence in the health sector.

provided care to those who could not help themselves, such as the sick, the orphaned and the elderly, and support for the poor and destitute. Thus, continuing care services can be understood as coming under a subset of the larger social policy literature. Originally, services were provided as a response to need and as a means of protecting the public, that is, a type of societal insurance against risk. In the current era, continuing care is provided primarily as a care-related response to need.

The development of social and health services in Canada has a long history. Writers on this subject (Armitage, 1996; Guest, 1985; Prince, 1996a; and Splane, 1965) have tended to break this progression into several different time periods. Continuing care emerged as a new sector within the health care industry in the 1970s and 1980s. Thus, this period will be the primary focus of this chapter. A brief review will be provided of the evolution of health and social services in Canada to set the historical context out of which continuing care emerged. Thus, this chapter will focus on four periods: the emergence of social security (the colonial period to the end of World War II), the consolidation of social security (1945 to the early 1970s), retrenchment in health and social services (early 1970s to early 1990s), and reform and restructuring (early 1990s to the present). Each section will provide an overview of health services, social services, and continuing care. This chapter concludes with a discussion of some of the main threads in the evolution of health and social services and continuing care.<sup>15</sup>

## The Emergence of Social Security in Canada (the 1700s to 1945)

### Health Services

In the colonial period, health care was related primarily to the protection of the public and the housing of the indigent. Meilicke and Storch (1980) note that buildings to provide for the insane were built as early as 1714, and provisions for the care of individuals with leprosy were instituted in 1844. Local boards of health were established as early as 1832 to deal with outbreaks of disease, although during this early period they were often disbanded when the epidemic subsided. The latter part of the 1800s saw the establishment of the Red Cross (1896), the Victorian Order of Nurses (1897), and provincial Boards of Health such as that established in Ontario in 1882.

The early 1900s saw the emergence of the medical care and hospital sectors. The Canadian Mental Health Association and the National Institute for the Blind were established in 1918. Saskatchewan implemented municipal doctor and union hospital plans in 1914 and 1916, respectively. The federal Department of Health was established in 1919, and municipal hospital plans were implemented in Manitoba and Alberta in 1920. There was a gradual evolution of hospital and physician services during the 1920s and 1930s. Hospitals were originally developed to house

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<sup>15</sup>As the development of social and health services in Canada has been well documented elsewhere, this chapter will only provide a summary overview of major policy milestones and of trends and developments that relate to the care of seniors. Readers interested in a more in-depth analysis are referred to the work of Armitage (1996), Crichton, Hsu, and Tsang (1994), Guest (1985), Meilicke and Storch (1980), Prince (1996a), Splane (1965), and Taylor (1978, 1987). Much of the text in this chapter is based on these sources.

the indigent and were often attached to churches and run by religious or charitable organizations. Long term care facilities and group homes were originally institutions for the destitute and disabled. Until the early 1900s, health services could best be described as constituting a subset of social welfare services.

### Social Services

In the pre-confederation era, services for the poor, sick, mentally ill, and delinquent were primarily handled by the family, religious organizations and voluntary lay groups. During this period, three major elements shaped the provision of social and health services: frontier life, the role of the church, and the Elizabethan Poor Laws.

The period preceding 1867 saw the consolidation of poor relief as a municipal responsibility in Canada West (Ontario) by the passage of the *Municipal Corporation Act* in 1849. This Act made the towns and townships the basic units of local government. The powers granted to the counties and larger cities were building and maintaining gaols (jails), houses of correction, and houses of industry. Towns were also given powers to pass bylaws regarding almshouses, houses of refuge, and workhouses. These responsibilities were extended to incorporated villages in 1868. Towns and villages could raise money for poor relief by taxation or by special appropriations from general funds.

The period after confederation (1867 to 1900) saw the incorporation of most of the existing provinces into Canada and the opening up of the west by the railway. During this period, the workforce was shifting from family farms to urban and industrial centres. This period saw the development of new voluntary agencies and a shift from institutional to outdoor relief.

There were a number of initiatives undertaken in the early 1900s to protect workers and children. By 1921 all provinces except Prince Edward Island had passed legislation for workers' compensation programs. As servicemen returned from the war, the federal government addressed some of their needs through a series of legislative measures. These programs paved the way for new forms of income security such as those established by the *Old Age Pension Act* of 1927. Prior to 1927 financial assistance for the elderly was provided through relief measures and private charity. By 1936 all provinces were participating in the Old Age Pension scheme. The *Old Age Pension Act* laid the groundwork for future federal/provincial cost sharing agreements.

During the Great Depression of the 1930s, ad hoc measures to provide assistance proved to be inadequate and there were serious protests and mounting social tensions in Canada. As a response to these pressures, and as a way of dealing with the crisis, the federal government passed the *Employment and Social Insurance Act* of 1935. However, the Act was declared *ultra vires* by the Judicial Committee of the Privy Council.

The federal government responded by proposing a constitutional amendment which added the responsibility for unemployment insurance to Section 91 of the *British North America Act*. This

amendment was approved and on July 1, 1941, the *Unemployment Insurance Act* of 1940 came into effect. The federal government also appointed the Royal Commission on Dominion-Provincial Relations (the Rowell-Sirois Commission) in 1937. The Commission was asked to examine the financial and economic basis of Confederation.

The report of the Rowell-Sirois Commission was released in 1940 and concluded that, with a few important exceptions, provincial autonomy should be maintained and strengthened. The Commission recommended that the federal government be responsible for unemployment insurance and old age pensions. In addition, the Commission proposed a system of unconditional equalization grants to the provinces so that social welfare programs could be provided across Canada in accordance with national standards.

The British Beveridge Report was released in 1942 and was a visionary plan for postwar reconstruction. Shortly after the release of the Beveridge Report a decision was made to prepare a similar plan for Canada. This resulted in the report on social security for Canada (The Marsh Report) in 1943. Marsh argued for a social security system buttressed by a comprehensive employment policy. The Marsh Report was in fact more comprehensive than the Beveridge report as, in addition to income security, it made recommendations regarding health policy and post-war employment. The Marsh Report is now regarded as a landmark document which provided the conceptual framework for the development of social security in Canada. The Heagerty Report on health insurance and public health was also released publicly in 1943. This report called for a joint federal/provincial program of health insurance with a full range of benefits such as medical, dental, pharmaceutical, hospital and nursing services.

In order to pull together the results of all of the reports released between 1940 and 1944 and to map out a plan of action for the post-war era, the Dominion-Provincial Conference on Reconstruction was convened on August 6, 1945. The social security proposals included: making old age pensions universal; expanding the coverage of unemployment insurance to persons not previously covered; and establishing comprehensive health insurance. These proposals are discussed later in the section on the consolidation of social security.

### Continuing Care

Long term care facilities and group homes emerged from the early institutions for the destitute and disabled. Home care nursing and homemaker services emerged in the late 1800s and early 1900s with the work of the Victorian Order of Nurses and the establishment of homemaker services. La Perrière and Bowen (1995) discuss the emergence of the Victorian Order of Nurses,<sup>16</sup> who provided home nursing care, and the founding of the Visiting Housekeepers in Toronto in 1925. Individuals and families had to pay directly for homemaker and home nursing services until the 1950s. At that time, some provincial governments started to pay for these services or to fund

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<sup>16</sup>For an overview of the emergence of the medical and nursing professions in Canada, and the development of public health, see Crichton, Tsu and Trang (1994).

municipalities which, in turn, paid for such services.

The policy influence of the Elizabethan Poor Laws in New Brunswick and Nova Scotia reverberate to the modern day. Responsibility for the disadvantaged was given to municipalities in Nova Scotia and to parishes in New Brunswick. Nova Scotia established poorhouses and county homes which cared for all manner of people in need, including the elderly. These were, in part, the forerunners of long term care facilities. Over time religious organizations and governments began to provide services for special groups. However, as Alexander (1995) notes, "considerable mixing of groups still occurred as late as 1958 in Nova Scotia" (p. 4). In addition, municipalities maintained responsibility for long term care facilities in Nova Scotia until the mid-1990s and continue to be responsible for social services institutions.

Ontario rejected the poor laws approach and gave primary responsibility for assisting the disadvantaged to the disadvantaged themselves, their families and private charities. Any public provision of services was the responsibility of the municipalities which, however, were reluctant to become involved. Thus, many of the poor, sick, mentally disabled, and others came to be housed in jails with criminals. In Québec the Catholic church took the lead in providing social and health services for the elderly and disabled.

## The Consolidation of Social Security (1945 - early 1970s)

### Health Services<sup>17</sup>

The initiatives noted in the previous section culminated in the tabling of the "Green Book Proposals" at the Dominion-Provincial Conference of 1945. These proposals called for the adoption of a provincially based health insurance scheme to be subsidized by the federal government. Financial assistance to the provinces would be comprised of grants for planning and organization, health insurance grants for a wide range of benefits, health grants, and financial assistance in the construction of hospitals (Taylor, 1978, p. 3). The Green Book Proposals failed, due to disagreements regarding the mechanisms of allocating tax revenues between the federal government and the provinces.

In 1948, Prime Minister Mackenzie King announced the national health grants program. This program incorporated three of the four Green Book Proposals on health care policy but excluded grants for health insurance. Funds were made available for a variety of medical and public health purposes including hospital construction and research. This initiative had several consequences. It enabled the federal government to review each application and take public credit

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<sup>17</sup>Much of the discussion on health services is based on the work of Malcolm Taylor (1978, 1987). The interested reader is referred to these sources for a more detailed discussion of the emergence of government funded hospital and physician services.

for each grant. It greatly increased the number of available hospital beds and contributed to the concept of the "scientific medical model" of health care by its allocation of funds for scientific research.

Guest (1985) records that a prominent medical specialist threatened then federal Minister of Health, Paul Martin (Sr.) that he would close his world famous clinic and move to the United States if the federal government did not involve itself in more active funding of health care. This information was relayed to Prime Minister Mackenzie King, who eventually came to the decision to initiate the health grants program. The threat of moving to the United States is one that has been used more than once by Canadian physicians. Taylor (1987) notes that the health grants came about by Minister Martin (Sr.) trying to persuade the Prime Minister that he should not end his career without at least initiating health insurance (Taylor, 1987, p. 163). The maximum step that Mackenzie King would endorse was the implementation of the health grants proposal.<sup>18</sup>

After 1948, the federal government took the position that it would only involve itself in the issue of health insurance if called on to do so by a majority of the provinces. However, there was pressure to take action for a number of reasons. The Canada Sickness Survey and the Canadian Tax Foundation reports pointed out Canada's high level of illness and existing disparities in health care and, by 1950, four provinces had developed varied health insurance programs and demanded that the federal government honour its 1945 offer of cost sharing for health care.

There were also countervailing pressures in that the Canadian Medical Association (CMA) in 1955 officially reversed its 1943 approval of government administered programs. The Canadian Hospital Association (CHA) concurred with the recommendations of the CMA as did the life insurance industry. Public opinion, increasing press coverage, a commitment to health insurance in the 1953 election, and provincial pressure ensured that the issue would be addressed at the 1955 federal-provincial meeting to negotiate tax arrangements. At this conference, several provincial premiers called for, or proposed, national health insurance schemes.

The *Hospital Insurance and Diagnostic Services Act* was passed in 1957. It called for a detailed set of standards and required that service be delivered on equal terms and conditions. This effectively prevented any province from accepting the private insurance model since a program calling for a "means test" would not be equal for everyone. The effect of this Act was to establish an expensive hospital-based system of health care. Other services such as long term care, tuberculosis, and mental health facilities were not covered. This led to an inequitable distribution of health services between the have and have-not provinces. The decision to first develop a hospital-based infrastructure clearly set the tone for Canadian health care as other alternatives were effectively ruled out once this decision was made (Taylor, 1978).

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<sup>18</sup> It is quite likely that Minister Martin may have used the example of the physician in his arguments with the Prime Minister as Guest's source for his information is an interview with the Honourable Paul Martin (Sr.) in the January 8, 1975 edition of the Vancouver Province newspaper.

One factor that led to action for medicare was that the New Democratic Party (NDP, the successor to the CCF) and their Saskatchewan medicare program showed that such a program was feasible and effective. A second factor was the report of the Royal Commission on Health Services, the Hall Commission, (originally established by the Right Honourable John Diefenbaker when the Conservative Party was in power from 1957 to 1962) which called for a universal, portable, accessible, comprehensive and government administered medical care program.

Concepts of medicare were discussed at a federal-provincial conference in 1965. A number of provinces supported the idea in principle but wanted more autonomy than they had been given under the 1957 Act, particularly Québec, which said it would not participate in a federal-provincial program. At a subsequent Provincial Premiers Conference, provincial opposition was very strong; however, the bill had already passed first reading in the House of Commons and the Liberals did not withdraw it.

The *Medical Care Act* which was passed in 1966<sup>19</sup> completed the program of basic health coverage for Canadians. It allowed for the maintenance of the fee-for-service, private enterprise model of physician services and, to a great extent, precluded the adoption of alternate forms of medical care. Furthermore, this action completed and consolidated the Canadian health care infrastructure based on "the acute care hospital and the individual patient-single doctor relationship" (Aucoin, 1974, p. 57).

### Social Services

The era from 1946 to the early 1970s also saw the consolidation and expansion of social service policies and programs, some of which, such as old age pensions and unemployment assistance, had been part of the Green Book Proposals. In 1951 a constitutional amendment was passed which enabled the federal government to make laws with regard to old age pensions. This was followed in 1952 by implementation of the Old Age Security program which provided a universal pension to those 70 years of age or older and the Old Age Assistance program which provided a means-tested pension for those 65-70 years of age. The *Disabled Persons Act* of 1954 provided disability pensions to totally and permanently disabled persons. Unemployment insurance benefits were increased in 1955 and the *Unemployment Assistance Act* was passed in 1956. This Act provided for federal reimbursement of 50 percent of the cost for provincial programs of financial assistance to needy unemployed persons.

The 1960s saw the consolidation of much of the Canadian social security system. The National Welfare Grants program was introduced in 1962 to strengthen social services through training and innovative projects. The Canada Pension Plan was implemented in 1966 to supplement old age pensions and to provide coverage for widows and the disabled. The Québec Pension Plan provided similar coverage for residents of that province. In the same year, the *Old Age Security Act*

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<sup>19</sup>All provinces had passed their own legislation to develop publicly funded medical care systems by the end of 1971.

(OAS) was amended to provide a Guaranteed Income Supplement (GIS) to pensioners with low incomes. OAS benefits were phased in over a five year period for those 65-70 years of age so that benefits would eventually be paid out to people at age 65.

The year 1966 also saw the introduction of a major new initiative, the Canada Assistance Plan (CAP). This plan provided for "a comprehensive program for federal sharing of provincial expenditures for public assistance and for welfare services on a conditional cost-sharing basis similar to that in health" (Meilicke and Storch, 1980, p. 10). The main purposes of this program were to help people achieve or retain independence and to improve the standards of public welfare. CAP consolidated numerous federal/provincial programs based on need, or on means, into a single program which provided benefits to meet needs regardless of the cause (for example, defects of character, laziness) of those needs. CAP benefits extended beyond the basic requirements for food and shelter to other benefits such as counselling, homemaker and day care services, and the care of persons in long term care institutions. CAP also contained two new ideas, aid for the working poor and an appeal mechanism.

### Continuing Care

Hogan, Bergman, McCracken and Patterson (1997), writing on the development of geriatric medicine in Canada, note that in the early part of this century few physicians viewed geriatric medicine as an "enticing field." As late as 1957, a Canadian Medical Association Journal editorial called Geriatrics a "pseudospecialty." In 1965, the Canadian Medical Association called for greater emphasis on aging in the curricula of medical schools. In 1971, the University of Manitoba "approved the establishment of a teaching unit in geriatrics" (Hogan et al., 1997, p. 1136). After 1971, Departments of Geriatrics were established in all medical schools. The Canadian Society of Geriatric Medicine was founded in 1981 (Hogan et al., 1997, p. 1136).

Miles-Tapping (1989) provides an overview of the development of physiotherapy in Canada.<sup>20</sup> She notes that physiotherapy started in Great Britain with a small group of nurse-masseuses, the Incorporated Society of Trained Masseuses (ISTM). In the early part of this century, ISTM-certified massage practitioners and remedial gymnasts started to organize and seek professional standing. The need for this type of therapy was recognized in the two world wars in treating soldiers on the battlefield and in caring for their disabilities after the war. By the 1960s, there were nine university physiotherapy programs in Canada.

Adult day care centres are a relatively new component of continuing care, and the extent to which they are used varies across jurisdictions. They emerged as components of services provided in long term care facilities and as stand alone community services for the elderly. British Columbia

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<sup>20</sup>Unfortunately, Miles-Tapping (1989) does not provide much detail on the emergence of community physiotherapists.



has a relatively well developed adult day care sector.<sup>21</sup>

By 1971, Canada had build a medical care system which was anchored in the institutional model of the hospital and the professional privilege of physicians. The speciality of geriatrics was emerging in the early 1970s, and there were some early home care programs which were initiated at this time. However, most continuing care services were still under the social welfare umbrella. The emergence of the CAP was a major milestone for continuing care as it brought under a federal-provincial cost sharing agreement services such as long term care facilities, group homes, and homemaker services.

### **Fiscal Retrenchment (early 1970s - early 1990s)**

#### Health Services

The shared-cost mechanism of funding health services reduced incentives to economize. In addition, increases in expenditures no longer resulted in commensurate improvements in health indicators such as life expectancy (Taylor, 1978). Therefore, a federal proposal was developed in 1971 which would "achieve the twin goals of increasing provincial flexibility and containing program costs" (Van Loon, 1978, p. 460) by providing a block grant to provinces provided that acceptable federal standards were maintained. The principle of equalization was to be maintained. By 1975 hospital insurance costs started to rise rapidly and a series of ceilings was placed on the growth of the federal contribution to provinces for health insurance.

While fiscal considerations were no doubt paramount, the move to community based services (Hastings, 1972) and the "health field concept" enunciated by then federal Health Minister Marc Lalonde in his report *A New Perspective on the Health of Canadians* (1974) reflected a move to greater innovation and flexibility in the provision of health services. These reports, and the desire of the federal government to avoid direct public criticism for health costs, led to consideration of the block funding approach. The federal government was concerned about the open-ended nature of the existing cost sharing arrangements in which it was required to match the provincial contribution (that is, pay 50 percent of the total cost) for all hospital and medical services instituted by the provinces. These arrangements provided an implicit incentive for provinces to increase expenditures as they were dealing in "50 cent dollars." There was no meaningful incentive to restrain costs. The move to block funding would allow provinces greater flexibility in the use of federal dollars as the federal contribution would no longer be restricted only to hospital and medical services. Funding under the block grant system could be used to develop new health programs, such as long term care services.

The system of block funding was brought into being in 1977 through the *Federal-Provincial*

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<sup>21</sup>Gutman, Milstein, Killam, Lewis and Hollander (1993a, 1993b) provide an overview of adult day care in British Columbia.

*Fiscal Arrangements and Established Programs Financing Act* (EPF). Block funding provided a greater predictability of expenditure to the federal government and provided an incentive to restrain increases in health expenditures. The federal contribution had been separated from program costs.

The block grant to be provided to the provinces was arrived at by providing a transfer of tax points to the provinces and a cash grant equivalent to the remainder of its contribution for the 1975/76 fiscal year (the base year for purposes of calculation). The cash grant would escalate annually in relation to increases in per capita GNP. An additional per capita grant of \$20.00 was also provided under EPF to provinces to assist them in developing alternative health services (called Extended Health Care Services) such as nursing homes and home care services (Alexander, 1995, p. 13).

The wage and price controls of the Trudeau Liberal government, which had been introduced in late 1975 and early 1976, came to an end in 1978. This prompted attempts to "catch up" by those in the health care sector. There was an increase in extra-billing by physicians and a greater militancy among nurses and other unionized groups in the health care industry. These cost pressures led to charges that the federal government was not fulfilling its fiscal obligations to the medicare system and that provincial governments were diverting federal health contributions under block funding to non-health purposes. Justice Emmett Hall, who had chaired the Royal Commission on Health Services in the 1960s, was asked to review the state of Canada's medicare system by the Conservative government of Joe Clark. He was asked to address two major questions: "Were the provinces, as charged, diverting federal health funds to non-health purposes? Were extra billing by doctors and hospital user fees violating the principle of reasonable access and thus eroding Medicare?" (Taylor, 1987, p. 428). Justice Hall concluded that federal health funds were not being diverted to other uses by the provinces and that extra-billing by physicians and hospital user fees would eventually erode and destroy the medicare program. Similar ground was covered by the reports of the Parliamentary Task Force on Federal-Provincial Fiscal Relations (1981) and a CMA Task Force on the Allocation of Health Resources (1983).

In order to ensure the integrity of Canada's medicare program, the Liberal government prepared, in 1982, a White Paper on a proposed Canada Health Act. The purpose of this proposed Act was to consolidate the *Hospital and Diagnostic Services Act* of 1957 and the *Medical Care Act* of 1966 into one Act, to ban extra-billing by physicians, and to ban hospital user fees. During 1983 there was considerable controversy between the provincial governments and the federal government on the proposed Act. Nevertheless, the *Canada Health Act* was passed in April 1984.

This Act clearly outlined the five major principles of the Canadian health care system. These principles are: accessibility, comprehensiveness, portability, universality and public administration. In addition, this Act provided penalties for extra-billing (billing by physicians above the rates set out in provincial fee schedules) and for user fees for hospital care. However, in keeping with earlier traditions, the five principles of the Canadian health care system and the restrictions on extra-billing and user fees only apply, under the Act, to the insured health services of hospitals and physician services. They do not apply to extended health care services (EHCS). Most continuing care services

such as long term residential care and home care services come under the EHCS provisions of the *Canada Health Act*. This is why, for example, it is possible to charge user fees in long term care facilities and why most continuing care services are not portable across provinces. The components of the continuing care system which come from the social services sector, such as homemaker services, continued to be covered by provisions of the Canada Assistance Plan (CAP). The 1980s also saw a significant curtailment of federal funding through changes to the originally stated rates of increase in the cash portion of federal/provincial cost sharing. Health and social transfers including those for post-secondary education, now come under the Canada Health and Social Transfer (CHST).<sup>22</sup>

### Social Services

The 1970s and 1980s were a period of false starts and failed proposals in the social welfare sector. The Special Senate Committee on Poverty (the Croll Committee) released its report in 1971 and called for a comprehensive anti-poverty program, including a guaranteed annual income. In 1971 the federal government started work on a guaranteed annual income (GAI) proposal. Proposals for a "model" system along the lines of the Marsh Report and including the GAI concept were published in 1973 as the *Working Paper on Social Security in Canada*. However, no changes were enacted and the concept of the guaranteed annual income faded from the scene.

In the late 1970s the federal government tried to establish an overall framework for financing social services (Armitage, 1996, p. 105). In 1977 the *Social Services Act* was introduced to replace parts of the CAP and *Vocational Rehabilitation of Disabled Persons Acts*. However the Act was withdrawn due to provincial opposition and problems related to the administration of the Act. Another attempt to move provinces to a block funding approach for income and social security also failed.

The energy crisis and high rates of inflation in the 1970s provided an economic brake on the development of new programs. This trend was exacerbated in the 1980s by the worst recession up until then, since the depression of the 1930s. In the 1980s there was a continuing tension in the fields of income and social security; attacks were launched on the concept of universality, and a proposed day care program was shelved.

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<sup>22</sup>When CAP was enacted in 1966 most of the services which now come under the umbrella of continuing care were, in fact, in the social welfare sector. This included long term care facilities, homemakers, group homes and so on. Only professional services such as community nursing were in Ministries of Health. Chronic care hospitals were also in the health sector but were there to take advantage of the cost sharing provisions in place for hospital services, prior to EPF. With the advent of long term care programs across Canada in the late 1970s many of the services traditionally in the social service sector were transferred to Ministries of Health. This happened in British Columbia as part of the planning and implementation of the Long Term Care Program. In 1996, CAP and EPF were amalgamated into the Canada Health and Social Transfer (CHST).

### Continuing Care

This period was an important one for the evolution of continuing care. The establishment of the EHCS in EPF funding provided the opportunity for provinces to enhance their long term care systems as it brought new money into this sector. Some provinces had already made enhancements through CAP funding. Béland and Lemay (1995) note that resources for long term care were increased before EPF in Québec and New Brunswick. There were no significant effects on funding in Ontario and Manitoba. However, in British Columbia there was a significant increase in funding to long term care between the 1976/77 and 1977/78 fiscal years (Béland and Lemay, 1995, p. 48). With the introduction of EPF, and the infusion of new money into long term care, there was a decrease in the proportion of long term care funding through CAP. The percentage that health transfers for EHCS constituted of all health transfers was zero for EPF in 1975 and 5.7 percent for CAP. By 1980, the EPF percentage was 9.2, and CAP was 1.5.

The EPF system of funding meant that federal funds for health care were no longer tied exclusively to hospitals and medical care and could be used for other health-related services. This allowed provinces to enhance their health care systems by providing a range of community and home based services. This change served as an impetus for the development of a full range of long term care services, including services which had previously been in the social welfare sector.<sup>23</sup>

The change to EPF funding in 1977 was an important factor in allowing provincial governments to move more aggressively into providing more comprehensive services for seniors and the disabled. It may also have been a factor in moving some services which were previously in social services ministries, such as long term care facilities, into Ministries of Health. The impetus of the EPF allowed for greater flexibility at the provincial level. This, in turn, enabled provincial governments to more easily move into a phase of consolidating services from the acute, public health and social services sectors into more integrated systems of care for the elderly and disabled. Thus, one can think of the period from 1977 to the early 1980s as a time of system building. The period from the early 1980s to the early 1990s can be thought of as a period of systems consolidation in which various jurisdictions learned from each other. As will be seen later it is not totally clear how

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<sup>23</sup>The relevance of the move to EPF (Van Loon, 1978) on the development of the continuing care sector was significant. It was a key factor in adopting the new Long Term Care Program in British Columbia. As noted by Cutt (1989) and Prince (1996a), British Columbia had been able to have relatively balanced budgets throughout the 1970s with surpluses from some years used to offset deficits in other years. There were, in fact, significant surpluses for the period 1978 - 1981, and there was a modest surplus in 1977. In addition, the Social Credit party under William Bennett had a focus on providing services for the elderly during the mid to late 1970s. In this writer's view there were at least four major catalysts for the emergence of the Long Term Care Program in British Columbia: the change to EPF funding; surplus revenues; a will to do something for seniors by the politicians of the day; and a champion for developing a Long Term Care Program at the Assistant Deputy Minister level in the Ministry of Health (Mr. Jack Bainbridge). The program was planned in 1977 and became operational on January 1, 1978. Other writers (Shapiro, 1993 and Crichton, 1997) have also noted the impact of the change to EPF funding on the development of the long term care sector in Canada.

one can characterize the current period, but it may be that it is in fact a period of decline, or at best renewal.

At a social policy level the fact that continuing care services are not insured health services means that there continue to be ongoing discussions, and shifts in policy, about matters such as user fees and the portability of services which would not be issues if continuing care was an insured service. There are also major regional differences in policy on these matters. Western provinces have had fairly modest fees for facility care which, at most, reflect the room and board portions of care, while people in the Atlantic provinces may be income tested up to the total cost of care.

In terms of British Columbia, it is not clear whether the Bill Bennett government would have moved to establish continuing care without the change to federal funding brought about through EPF. What is clear, however, is that one year after the announcement of EPF British Columbia had instituted a Long Term Care Program which integrated health and social services components into the Ministry of Health. System building continued in 1980 when home care nursing and rehabilitation services were added to form the Home Care/Long Term Care Program, and it was completed in 1983 when the name of the program was changed to Continuing Care. Perhaps the type of system which was established allowed for a more rational approach to substituting community and home based services for residential care. The fact that all key services were under one administrative umbrella may also have contributed to the ability of continuing care to weather the fiscal shocks of the recession of the early 1980s as there were not several divisions or branches competing with each other for resources and taking independent fiscal measures without considering the implications for other parts of the system.

In terms of organization, a Federal/Provincial/Territorial Working Group on Home Care and an interprovincial committee on long term care were combined into one sub-committee for continuing care. The Federal/Provincial/Territorial Sub-Committee on Long Term Care held its first meeting in Ottawa in May 1986.<sup>24</sup> The sub-committee produced a range of valuable reports including the *Report on Home Care* (1990) and the policy document *Future Directions in Continuing Care* (1992). Overall, there seemed to be a movement across jurisdictions for a greater consolidation of continuing care. For example, all continuing care services, by 1993, came under one administrative entity headed by an Executive Director or Assistant Deputy Minister in British Columbia, Saskatchewan, Manitoba, Ontario, Québec, and Prince Edward Island.

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<sup>24</sup>While the title of the sub-committee was Long Term Care, it essentially included all continuing care services. The title of the committee was changed to the Federal/Provincial/Territorial Sub-Committee on Continuing Care in 1991. It was disbanded in 1992 with the restructuring of the Federal/Provincial/Territorial Advisory Committee structure. This writer was elected to be a co-chairperson of the Long Term Care Sub-Committee at its inaugural meeting in May 1986. The sub-committee had two representatives from most jurisdictions, one for long term care and one for home care. Initially, British Columbia and Saskatchewan only had one representative each as they both had Divisions of Continuing Care which included both long term care and home care.

In terms of service quality, the Canadian Council for Health Services Accreditation was actively working on the development of standards for accrediting long term care facilities in the late 1980s. In addition, British Columbia developed its own sets of standards for long term care facilities, homemaker services and adult day care centres. A standards branch had been instituted within the Continuing Care Division in the late 1980s to finalize care standards and to ensure quality. Thus, the standards branch served a type of provincial accreditation function.<sup>25</sup>

## Reform and Retrenchment (early 1990s - present)

### Health Services

Royal Commission and other inquiry reports were produced on the health system in almost every province in Canada in the late 1980s and early 1990s.<sup>26</sup> Most of these reports called for some type of regional reform and advocated the establishment of Regional Boards which would be responsible for the delivery of a range of health services, typically excluding physician services and provincial drug plans. In addition, the cash portion of the federal transfer payment to the provinces was reduced resulting in fiscal pressures at the provincial level. This resulted in two major pressures for change in the health system: changes in structure and changes in financing. In addition, the movement towards reform in these two areas opened the door for other types of change. However, much of what has happened to date is a restructuring of services. Actual reform itself, in the sense of implementing new and improved systems and processes of service delivery, still appears to be in its early stages.

There has been a fair degree of change and adjustment in the reform process across Canada.<sup>27</sup> An example of change occurring during the process of reform can be seen in British Columbia. The

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<sup>25</sup>The municipal health departments developed their own standards branches and used, sometimes with some modifications, the provincial standards which had been developed in a joint collaboration between the Continuing Care Division and the continuing care industry in British Columbia. The Ministry branch was responsible for overall standards development and coordination and for program monitoring for the 16 provincial health units. The branch was discontinued as part of the BC Ministry of Health's restructuring in the 1996/97 fiscal year.

<sup>26</sup>British Columbia Royal Commission on Health Care and Costs. (1991). *Closer to home*. Vancouver: The British Columbia Royal Commission on Health Care and Costs; New Brunswick Commission on Selected Health Care Programs. (1989). *Report of the Commission on Selected Health Care Programs*. New Brunswick: Commission on Selected Health Care Programs; The Nova Scotia Royal Commission on Health Care. (1989). *The report of the Nova Scotia Royal Commission on Health Care: Towards a new strategy*. Halifax: The Nova Scotia Royal Commission on Health Care; Premier's Commission on Future Health Care for Albertans. (1989). *The rainbow report: Our vision for health*. Edmonton: Premier's Commission on Future Health Care for Albertans; Saskatchewan Commission on Directions in Health Care. (1990). *Future directions for health care in Saskatchewan*. Regina: Saskatchewan Commission on Directions in Health Care.

<sup>27</sup>This section is based on telephone interviews with provincial and territorial officials by the author between September and December 1997.

original concept in British Columbia was to have two layers of regional bodies, Regional Boards (RHBs) and Community Health Councils (CHCs) with the emphasis for local delivery being with the CHCs. This was changed to a model of mixed RHBs and CHCs with less than half of the geographic units originally envisioned. Thus, reforms continue to evolve over time, making it difficult to pin down and describe health reforms.<sup>28</sup>

British Columbia, Alberta and Saskatchewan have adopted a reasonably classic model of devolution. Regional Boards have been established (mostly with appointed members at this point), and political and administrative authority has been devolved to these Regional Boards. In Saskatchewan, the former Continuing Care Division was eliminated and the functional responsibility for these services was integrated into community health. Similarly, the director positions for long term care and home care were eliminated in Alberta, and their functions were incorporated into other areas. In British Columbia, the Continuing Care Division was recently eliminated, but a new Assistant Deputy Minister (ADM) level position was created for acute and continuing care.

Manitoba initially adopted a regional model for its northern health services, a much more modest approach to regionalization, but more recently has moved to more comprehensive regional reforms. Manitoba has also undergone other forms of health reform. For example, in 1993 Manitoba Health had an Assistant Deputy Minister level position for continuing care. This position was later changed to an Assistant Deputy Minister for community services. This reflects another current trend in health reforms in Canada, that of an increased emphasis on public/community health and primary care, broadly defined to include primary care physicians, public health and community health (that is, all non-institutional services).

Ontario has not adopted regional reforms. The District Health Councils (DHCs) continue to be advisory bodies. In continuing care, newly formed Community Care Access Centres now serve as the single point of entry to services. In addition, some public health services have been transferred to the municipal level. This initiative can be seen as a kind of partial devolution of responsibility for health care to municipalities, rather than devolution to health regions which has been the practice in other jurisdictions.

Québec has had a type of regional model for some time with a regional board structure and community health centres or Centres locaux de services communautaires (CLSCs). Greater authority has been given to the regional boards over the past years.

New Brunswick was the first province to adopt health reforms when it amalgamated over 50 hospital boards into seven regions, each with its own Regional Hospital Board. (One region has two boards, one English and one French.) Each board is responsible for the operation of hospitals in its region. This is a kind of mixed model and does not represent regional reforms *per se*. Rather it is a kind of amalgamation of independent service agencies (in this case hospitals) into a larger

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<sup>28</sup>For an overview of health reforms across Canada, the interested reader is referred to Hollander, 1997a and 1997b.

organizational entity. More recently, steps have also been taken to change 12 Family and Community Social Services Regions into seven regions to match the seven hospital regions. In addition, aspects of mental health services from Mental Health Programs have been integrated with the Extra-Mural Program and Family and Community Social Services to provide a coordinated approach to the delivery of residential and community based services for the elderly and disabled.

Nova Scotia has moved to implement four Regional Health Boards using a devolution model of regionalization. Responsibilities for long term care and home care have not yet been delegated to these Boards due to current efforts to implement a more comprehensive single point of entry system at the provincial level before devolving responsibility to the Regional Boards. There are also four separate "non-designated organizations" which are tertiary services. A major restructuring of the hospitals in the Halifax-Dartmouth area has occurred as well.

Prince Edward Island has adopted five regions in a devolution model which, like in Québec, covers both health and social services, and it has started an external evaluation of its reform process.

Newfoundland has instituted eight Health Boards for hospitals, health centres and nursing homes, and four community Health Boards for community and public health services. There does not appear to have been a major shift away from continuing care administrative structures at the provincial level in Newfoundland, or in Atlantic Canada, so far.

### Social Services

There has been considerable retrenchment and a completion of the flight from universality in the social welfare sector in the 1990s. The universal Family Allowance was abolished in 1992 and replaced with the Child Tax Benefit. The universal nature of Old Age Security was eliminated with the implementation of clawbacks through the tax system. In 1991, a "cap" was placed on CAP by restricting CAP transfers to British Columbia, Alberta, and Ontario to a five percent annual rate of growth. The federal government also enacted provisions to reduce, over time, the cash transfer for EPF such that by 2004 "the federal government would no longer be transferring any cash to the provinces" (Tester, 1996, p. 30). A review of social security was undertaken in 1994, but it was largely superceded by the federal Department of Finance and the announcement of the Canada Health and Social Transfer (CHST) in the February 1995 budget.

The CHST, which came into effect on April 1, 1996, is perhaps the most monumental fiscal change of this decade. The CHST combined CAP and EPF funding into a block grant for social, health, and educational services. It also significantly reduced the total amount of money transferred to the provinces. The combined budget for CAP and EPF was \$29.735 billion in the 1995/96 fiscal year of which \$18.538 billion was a cash transfer. Under the CHST, this amount was reduced to \$26.9 billion for the 1996/97 fiscal year, of which \$15.047 billion was a cash transfer, and to \$25.1 billion for the 1997/98 fiscal year, of which \$12.5 billion was to be a cash transfer (Department of Finance Canada, 1996). The federal Liberal government reversed the previous policy decision to reduce CHST cash transfers to zero. The original intent was to reduce transfers to \$11.1 billion and



have them increase marginally over time. However, the federal Liberal government announced a policy decision, during the 1997 federal general election, to not reduce the cash portion below \$12.5 billion. They also announced a major increase in funding to the health sector in the 1999 budget.

There is considerable controversy about the CHST. While the CHST maintains the five principles of medicare as national standards, only one of the five principles of CAP is enshrined in the CHST. This is the provision which prohibits provinces from imposing residency requirements on those receiving social welfare benefits. The other CAP provisions of need as the sole basis for income support, an appeal system, data reporting/sharing requirements, and the non-profit provision of social services have not been included in the CHST. There are no standards for post-secondary education; however, there were also no such standards under EPF. The retreat from standards which were part of CAP and the potential for provinces to deny benefits to the needy are of considerable concern to those working in social services. The Caledon Institute of Social Policy notes, "collapsing the Canada Assistance Plan into a larger transfer that includes health and post-secondary education will see social services suffer dramatically. By withdrawing CAP, there is no guarantee that provinces will invest in welfare and social services" (1995, p. 4).

### Continuing Care

The above review suggests that continuing care may be in some jeopardy as a consequence of health reforms in Canada. The elimination of senior continuing care positions in the organizational structures of Alberta, Saskatchewan, Manitoba, and to some extent British Columbia, is a cause for concern. Reductions in the level of institutional memory and expertise in continuing care at the provincial level may be an inadvertent by-product of two forces, regionalization and the focus on primary care/community models of service delivery. A hopeful sign, however, is that continuing care is still considered a major "product line" of the health care system at the regional level. There are several other encouraging signs: there is a major review of continuing care in Alberta; provinces such as Saskatchewan have increased funding to home care; and the province of Québec is looking at an integrated model of continuing care services.

The major change in social welfare in the 1990s was the merger of CAP and EPF into the new CHST. At the National Conference on Home Care in March 1998, in Halifax, there was a call by Neena Chappell, Professor of Sociology and Director of the Centre on Aging, University of Victoria, to have additional earmarked funding for home care (Chappell, 1998). It was proposed that this money be "protected" and not be included in the CHST. This can be seen as part of a movement by those representing "weaker" sectors to reestablish the principle of earmarked funding for certain areas which are seen as needing "fiscal" protection.

### **Discussion**

The material presented in this chapter leads to several observations. The first observation is that in the modern era, at least, social policy and economic policy are clearly interrelated. The

major social security reforms reached their zenith in the 1960s, which was a period of relative economic prosperity. Provincial initiatives, minority federal governments, and pressure by the CCF/NDP combined with a sound economic backdrop to bring about medicare. However, no sooner was this accomplished than the forces for fiscal austerity came back into play. Crichton (1993) notes that Mitchell Sharp, the federal Minister of Finance, warned the government about the potential costs of medicare. This resulted in a decision that the federal Liberal government would not extend matching grants beyond those to hospitals and physicians. Consequently, programs such as pharmacare and denticare are not designated as insured services. This decision is still with us today in terms of the current debate about whether pharmacare and home care should become insured services under the *Canada Health Act*.<sup>29</sup> In addition, this decision had a major impact on continuing care services over time. It meant that they would be included as Extended Health Care Services in EPF and the *Canada Health Act* but would not be insured services.

A second observation has to do with structural arrangements. In the 1970s and 1980s, continuing care was an emerging hybrid of health and social services which was struggling to find a place for itself. The reality for much of continuing care services in this period is captured by Crichton (1993) when she states:

Nevertheless, within provincial health departments, it was difficult to change the proportional amounts allocated to institutional services versus community care. The hospitals were well organized to resist reduction of their budgets and community care was divided between a number of small government departments and numerous voluntary organizations who were grateful for any subsidy they could get. (p. 306)

This also meant that, unlike hospitals and doctors, and even public health, there were no major institutional champions for continuing care at the decision making table. The Federal/Provincial/Territorial Advisory Committee on Community Health was dismayed that its home care working group was amalgamated with an interprovincial committee on long term care to form the Federal/Provincial/Territorial Sub-Committee on Long Term Care in 1986. As co-chairperson of that sub-committee, this writer had a running battle with the Advisory Committee on Community Health to maintain both home care and residential services within the sub-committee. In 1992 the federal/provincial advisory committee structure was changed, eliminating all other levels of committees and leaving only three advisory committees in the area of health: the Advisory Committee on Health Services (the former Advisory Committee on Institutional and Medical Services), the Advisory Committee on Population Health (the former Advisory Committee on Community Health) and the Advisory Committee on Health Human Resources. With the dissolution of the sub-committee on long term care, there was no longer a major institutional forum for

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<sup>29</sup> There was discussion about this at the March 1998 National Conference on Home Care. The point was made that it may be difficult to include home care as an insured service under the *Canada Health Act* because some services, such as homemaker services, may not fit under the umbrella of "medically necessary services." Some participants proposed that new legislation should be tabled which could get around this issue and have the same effect as making home care an insured service.

continuing care. It did not appear to be a priority of the advisory committee on health services. Thus, progress in continuing care remained relatively stagnant until late 1997 when a Working Group on Continuing Care was established under the Federal/Provincial/Territorial Advisory Committee on Health Services.

A third observation has to do with overall philosophy. Universality for income support programs died in the late 1980s and early 1990s. Thus, there has been a reversion to the residual model of welfare (Wilensky and Lebeaux, 1965, p. 135) in the social sector. The tension noted above in regard to the relationship between economic and social policy is also linked to the overall philosophical debate between the residual welfare model and the institutional welfare model. For health care, this debate also touches on our national character. These opposing philosophical positions are mirrored in the debates on medicare in the House of Commons in 1966. Health care is stated to be a right, not a privilege, and is not to be tied to one's income. Medicare is seen to be part of our national character and is considered to be a basic human right.<sup>30</sup>

Those who have opposed the practice, if not the principles, of the Canadian health care system have consistently made their arguments primarily on a financial basis, that is, perhaps we can no longer afford medicare.

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<sup>30</sup>These points of view are presented in the following quotes from Hansard:

**Mr. MacEachen - Health is not a privilege tied to one's bank account, but rather a basic right which is open to all (Hansard Vol. VII, 1966, p. 7545).**

**Mr. MacEachen - The government may not abrogate its obligations and, therefore, must ensure the national character of our country by establishing an acceptable level of services available to all citizens (Hansard Vol. VII, 1966, p. 7547).**

**Mr. Isabelle - Protection for basic human rights such as health, education, life and freedom can not be provided by for profit companies (Hansard Vol. VII, 1966, p. 7569).**

## CHAPTER 4: A LITERATURE REVIEW OF THE COST-EFFECTIVENESS OF CONTINUING CARE SERVICES

### Introduction

This chapter will focus primarily on literature related to the cost-effectiveness of home care versus residential care.<sup>31</sup> The term *cost-effectiveness* will be used here as a generic term to refer to the four methods of economic evaluation, that is, cost-minimization, cost-effectiveness, cost-utility, and cost-benefit analysis.

### Findings that Home Care is not Cost-Effective

A considerable amount of research has been conducted on the cost-effectiveness of home care in the United States, and much of the evidence which states that home care is not a cost-effective alternative to care in long term care facilities comes from the American literature. Much of this literature is based on two series of federally funded studies. Some 14 community care demonstration projects were funded in the late 1970s and the early 1980s. In addition, federal funding was also provided in the United States to an additional 10 projects from 1982 to 1985 for the National Long Term Care Demonstration, generally referred to as "channeling" (Mathematica Policy Research, 1986d, May). The channeling demonstration studies all used a rigorous methodology which included random assignment to the experimental and control groups.<sup>32</sup> The 10 channeling projects tested two types of case management, a basic case management model which introduced case management into the existing service delivery system and a financial control model which introduced case management plus additional resources. These resources could be used at the discretion of case managers to purchase additional, new services or enhancements to existing services.

Given the nature of the American continuing care system in the 1980s, it was considered that the appropriate way to study whether or not home care was a cost-effective alternative to residential care was to introduce case management (often with an enhanced home care program) into a community, to randomly assign eligible clients to existing community services or to enhanced services, and to determine whether or not the enhanced services led to greater quality of life and client satisfaction, decreased morbidity and mortality, increased functional status, and reduced admissions to long term care facilities and hospitals. Generally, researchers found that the experimental group had greater satisfaction and quality of life and somewhat reduced costs (Mathematica Policy Research, 1986, April). However, when the costs of the enhanced home care program were added into the equation, the overall costs were generally greater for the experimental

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<sup>31</sup>For an overview of cost-effectiveness studies for the full range of continuing care services and for home care versus hospital care, the interested reader is referred to the literature review by Hollander (1996). Methods of economic evaluation are discussed in more detail in Appendix A.

<sup>32</sup>In this study the term *channeling demonstration projects* will be used to refer to both the 14 community care demonstration projects and the 10 channeling studies.

group than for the control group (Berkeley Planning Associates, 1985; Mathematica Policy Research, 1986d, May). Thus, American researchers concluded that home care was not a cost-effective alternative to residential care because it did not decrease the rate of admission to long term care facilities and, as such, constituted an add-on cost.<sup>33</sup>

Many of the subjects in the channeling demonstration projects had relatively low levels of care needs and, therefore, there was a low probability that the study subjects would be admitted to long term care facilities during the study period. Thus, there was little chance of cost-effectively substituting home care for residential care. There were, however, other studies where clients had relatively high care needs, but it was found that in spite of this level of need, many such clients did not go into care facilities during the study period. For a detailed overview of the results of the channeling demonstration projects the reader is referred to the reports by Mathematica Policy Research (1986d, May) and Berkeley Planning Associates (1985).

Hedrick and Inui (1986) analyzed 12 studies on the cost-effectiveness of home care which were deemed to be methodologically sound and used experimental or quasi-experimental research designs (a number of these were channeling demonstration projects). These were studies of chronically ill populations. Hedrick and Inui (1986) found that home care services appeared to have no impact on mortality, patient functioning or nursing home placements. They found that home care had no effect on hospitalization or tended to actually increase the number of days of stay in hospitals. They also found that ambulatory care was increased by up to 40 percent and that, overall, the cost of home care was not affected or was increased by up to 15 percent. Hedrick and Inui may have somewhat overstated the negative nature of their findings as a close examination of their data appears to reveal more mixed findings.

A study which illustrates the general approach used in the United States to analyze the cost-effectiveness of home and community based services is that of Skellie, Favor, Tudor and Strauss (1984) who analyzed the Georgia Alternative Health Services Project (one of the community care demonstration projects noted above). Enrollees in this study were required to be Medicaid-eligible, at least 50 years of age, and certified as eligible for nursing home care. The study had an experimental group and a control group. The experimental group was comprised of 444 individuals who received a comprehensive range of community based services including alternative living services, adult day rehabilitation and home delivered services. They also received screening and case management services. The control group (n=135) were eligible to receive existing community services. Clients were assigned to the two groups on a random basis.

The findings of this study were that after the first two years of enrolment 22 percent of the

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<sup>33</sup> The overview of channeling studies conducted by Mathematica Policy Research (May, 1986d) did note that the comparative costs of home care versus residential care were \$27 (US) compared to \$51 (US) per day. The two channeling case management approaches added \$3 and \$11 per day. Thus, the financial control model would have cost \$38 compared to \$51 per day. However, due to the low utilization of facility services, the increased costs of the channeling programs were not offset by savings from facility days averted.

control group and 21 percent of the experimental group were admitted to a nursing home, that is, no difference between groups. It was found that the costs of the experimental group were considerably higher than that of the control group and, as such, constituted "add-on" costs to Medicaid-reimbursed services. The authors note, however, that the cost per quarter for the experimental group was considerably lower than the cost for nursing home care and note that savings should be possible where home care can be substituted for nursing home care. The authors also note that it was difficult, under a voluntary screening system, to select individuals for whom community based services could be cost-effective. In addition, given the low demand for project services, the low volume of clients screened resulted in higher administrative and direct service costs.

In a related study, Vertrees, Manton and Adler (1989) examined the Georgia and California Medicaid waiver programs. These programs were enhancements of earlier programs and placed a greater emphasis on screening to ensure that those receiving community based services would be likely candidates for nursing home admission. The authors found that, for California, the monthly cost of community care was \$350 while monthly nursing home costs were \$1,144 for a savings of \$794. However, not all individuals admitted to the community program were eligible for nursing home care and for those who were eligible, community services did not actually prevent admissions. This also occurred in Georgia. Even though their targetting was fairly good (that is, 28.9 percent of admissions entered a nursing home in over 18 months) the actual rate of admission to a nursing home was similar for those in the community and for controls. The ability to accurately target clients was 10 times as good in Georgia as in California. The authors did not specify any reasons for this difference.

Weissert, Wan, Livieratos and Pellegrino (1980) conducted a study of the cost-effectiveness of homemaker services. Medicare-eligible clients who could benefit from homemaker services were randomly assigned into two groups, those who received homemaker services and those who did not. As with other studies it was found that the intervention had a negligible effect on institutionalization and that the cost of the intervention was much higher than any savings which could have been obtained. Weissert, Wan, Livieratos and Katz (1980) also found similar results for adult day care services.

Greene, Lovely and Ondrich (1992) conducted a transition probability analysis using data from the American National Long Term Care Demonstration. They found the following statistically significant results for a one year period: use of home nursing services deterred entry to a nursing home for those in wheelchairs; home health aid services deterred admission for those with cognitive impairments; personal care and housekeeper services deterred admission for those with severe functional disabilities. However, the authors do not provide cost data for their estimates and an inspection of their findings indicates that these services may generally not have been cost-effective (for example, an additional hour of nursing service per week reduced the probability of a 60+ day admission to a nursing home by 0.8 percent).

William Weissert is a very influential American writer on the cost-effectiveness of continuing care services. He essentially argues that it is difficult to make home and community based

services cost-effective. In his classic work (Weissert, 1985) entitled "Seven Reasons Why it is so Difficult to Make Community-Based Long-Term Care Cost-Effective," he summarizes the findings of a number of studies on this topic. He concludes that such services are typically not cost-effective because:

- Community care is an add-on to other services and is not a substitute for residential care;
- Only short nursing home stays can be avoided by community based care as some studies note that as many as 25 percent of residents return back to their own homes within three months of admission;
- Community care has not reduced the rates of institutionalization;
- Patients at high risk are hard to find because they are relatively low in number;
- Screening and assessment costs are high;
- Because most community services are small, unit costs are relatively high, due to overhead costs, particularly when all service slots are not filled;
- There is limited effectiveness in improving health status.

Weissert expanded his analysis in a study with two of his colleagues (Weissert, Cready, & Pawelak, 1988) in which they looked at over 700 citations published since 1960 with regard to the relative costs of community and home based services versus residential long term care services. Of the 700 documents, 150 were selected for review of which the 27 most rigorous and generalizable studies were chosen for detailed analysis, including the above noted study on the Georgia Alternative Health Services Project. They conclude:

- This analysis of home- and community-based long-term care studies has shown that such services usually raise overall health care service use and costs. Targeting on patients at high risk of institutionalization has been uneven and best accomplished when accompanied by a mandatory nursing home preadmission-screening program. Effect sizes have been quite small, usually saving too little money on institutional care to offset costs of the new treatment-home and community care. Hospital use may actually have been increased by home and community care in some studies;
- Health status effects are quite limited, primarily to patient and caregiver satisfaction and reduction of unmet needs;
- For community care to operate at lowest net costs, the new costs of community care

services must be substantially offset by savings on the use of existing services, such as institutional care.

(Weissert, Cready, & Pawelak, 1988, p. 366)

In 1991, Weissert published a paper entitled "A New Policy Agenda for Home Care" in which he restates his earlier findings and makes a number of proposals for increasing the relative cost-effectiveness of home care services. These proposals are:

- Improved Screening: Weissert notes that home care tends to serve a significant proportion of persons who would not have gone to a nursing home whether or not home care was available. Therefore, better screening and better targeting of clients is essential;
- Reduced Hospitalization: Weissert argues that the incentives inherent in the new prospective payments systems (PPS) for hospitals have stimulated them to reduce lengths of stay irrespective of whether or not home care is available. He notes, however, that planned and targeted preventive programs could reduce the number of hospital admissions and bring down the net costs of home care;
- Strategies for Reducing Costs: Weissert argues that home care could be more cost-effective if one could develop clinically relevant sub-groups to assess outcome potential, set expenditure targets or caps, plan and monitor care, and measure outcome benefits.

One Canadian study (Gerson & Hughes, 1976) was found which argued that home care is not more cost-effective than hospital care. However, the authors only considered the costs of nursing care.

### **Findings That Home Care is Cost-Effective**

There are a few points to note about the nature of the analyses done in the United States. As seen from the experience in Georgia, and from Weissert's work, there appear to be many subjects in the studies who do not actually require nursing home care. This appears to be a case of the American writers failing to clearly distinguish between the Maintenance and Preventive Model and the Long Term Care Substitution Model of home care. Costs will naturally be higher if a significant number of persons do not need nursing home care. It is surprising that there appears to be little use in the American literature of the three models of home care noted earlier in Chapter 1 given that the distinctions between these groups have been noted by American writers (Mathematica Policy



Research, 1986d, May; Berkeley Planning Associates, 1985; Hughes, 1985).<sup>34</sup>

While American writers talk about the comparison between community and home based care versus residential care, what they actually seem to study is the introduction of a new and expanded home care service compared to existing community services (which may include home care from funders other than Medicaid). It is not surprising then that the new service is more expensive. Doing something usually costs more than doing nothing. What they really look at is how the costs of doing something new and additional compares to the costs of doing nothing more than has been done, in regard to admission rates and lengths of stay for nursing homes. They generally do not directly compare the costs of community and home based services versus the costs of nursing home care.<sup>35</sup>

Hughes (1985) notes that for a Wisconsin Community Care Organization study, the findings of no cost-effectiveness were significantly influenced by 71 subjects in the experimental groups who received no care. When the cases were excluded, there was a 66 percent reduction in nursing home days for the experimental group. It is not clear from reading the reports of the channeling demonstration projects what affect a "no-care" sub-group may have had on the findings.

Of the set of channeling demonstration projects, the one conducted in South Carolina (Mathematica Policy Research, 1986d, May; Berkeley Planning Associates, 1985; Capitman, 1986) only included subjects who were assessed and were deemed to be eligible for, and in need of, residential services. This study found that home care was a cost-effective alternative to residential care. The South Carolina model had single entry and assessment and case management functions in that clients were screened for their need for residential service within a state administered system of care. The evaluation of On Lok (Berkeley Planning Associates, 1985; Mathematica Policy Research, 1986d, May) a system which has many of the same features as the British Columbia model (single entry, assessment, ongoing case management, and a single administration) had tentative findings of the cost-effectiveness of home care, although the number of cases was quite small and the authors advised considerable caution in the interpretation and extrapolation of their findings. Both of these studies included clients with high care needs. However, another study conducted in New York (Berkeley Planning Associates, 1985; Mathematica Policy Research, 1986d, May) which included clients with very high care needs found that home care was not cost-effective. This finding may have been due to the fact that relatively few of the high care needs clients were admitted to residential care during the study period. Also, this study did not have a single entry component.<sup>36</sup>

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<sup>34</sup>Hughes (1985) in her review of 13 studies on community based long term care noted that a major source of disparity may be due to "confused conceptualization" (p. 472) in regard to which type of population would benefit from enhanced community services.

<sup>35</sup>There were some exceptions in the literature (Mathematica Policy Research, 1986d, May; Sklar and Weiss, 1983).

<sup>36</sup>It may be that there were high needs clients in the community because there were insufficient long term care beds for them. In 1989, New York state only had 41 beds per 1,000 population 65 years of age or older (Hollander, 1989).

Finally, it should also be noted that there was evidence of significant reductions in the use of long term care facilities in the channeling studies for sub-sets of individuals who lived alone or were in nursing homes at the beginning of the study (Mathematica Policy Research, 1986d, May).

Greene, Lovely and Ondrich (1993) note that a key element to cost-effectiveness is risk targeting. They reanalyzed the data from the American National Long Term Care Channeling Demonstration and found that 41 percent of those in the control group were found to have some potential for net cost reductions by adding additional home care services to existing services. These are, however, potential not actual gains as the findings are based on statistical modelling of existing data. In a related study that reanalyzed channeling data, Greene, Ondrich and Laditka (1998) found that an optimal allocation of home care services resulted in a 10 percent reduction in overall costs, rather than the 12 percent cost increase produced by the demonstration itself.

As noted earlier, the American system of hospital reimbursement provides an incentive for early discharge. Leiby and Shupe (1992) conducted a study in which they looked at the relative efficacy of post-discharge follow-up as a measure to prevent, or reduce the rate of, readmission to hospital. They found a significant difference in readmission rates for the experimental and control groups. They found that the group receiving home care only had one readmission (2.7 percent) while the group which did not receive home care had a readmission rate of 36.8 percent. Unfortunately, the comparative costs of these readmissions were not calculated. Chubon and Redmon (1991) present a study which shows the steps that were taken to keep an extremely high risk individual out of hospital for one winter. No cost data are presented but it appears that the services provided would have cost considerably less than a comparable stay in a hospital.

Cummings and Weaver (1991) provide a review article which again notes the mixed and negative findings of the cost-effectiveness of home care. However, they also note the significant potential for costs savings which exists in the Acute Care Substitution Model of home care.

Hughes, Cummings, Weaver, Manheim, Conrad and Nash (1990) conducted a randomized controlled trial of instituting a hospital based home care program through the Veterans administration. The experimental group received the new home care service while the control group received whatever was normally available in the community. They found a non-significant cost saving of 10 percent for the experimental group. This saving was largely due to their lower use of private sector hospital care.

Dranove (1985) studied a hospital based home nursing care program. He compared two hospitals, one with a home nursing care program and one without and found that home nursing care significantly reduced both the length of stay in hospital and the number of follow-up visits. Average savings per patient were about \$300. In a study of persons discharged from the Visiting Nurse Association of St. Louis, Berry and Evans (1986) note that, based on physician estimates, patients in home care averaged 18 fewer days in hospital at an average saving of \$3,300 per patient.

Finally, it should be noted that in a recent study of the Arizona Medicaid long term care

program, Weissert, Lesnick, Musliner and Foley (1997) found that home and community based services "appeared to save substantial amounts on the costs of nursing home care" (p. 1329). The Arizona model of care has many similarities to the care delivery system in British Columbia. Assessors are state employees and are independent from program contractors. Clients are required to need at least a three month stay in a nursing home. A capitation model of funding<sup>37</sup> is used, and there is blended funding for both community and residential services.

With regard to Canadian studies, Shapiro and Tate (1989) found that home care appears to substitute for year-to-year variations in nursing home admissions but not for variations in hospital lengths of stay. Two studies of the New Brunswick Extra-Mural Hospital (Brown, Mills, Wynn, Dingle & Hogan, 1993; Brown, White, Wynn, Hogan, Ruderman & Baker, 1990) concluded that the introduction of the Extra-Mural Hospital had some effect in reducing hospital utilization, or the rate of increase in hospital utilization. However, these studies do not present detailed cost data. In a more recent retrospective study, Brown (1995) also analyzed the cost-effectiveness of the Extra-Mural Hospital (EMH) with regard to possible substitution effects for physician services. He concludes that the Extra-Mural Hospital had an unanticipated substitution effect in that the rate of growth in per capita utilization of physician services was reduced by 11 percent in the three regions with EMH compared to the three regions which did not have EMH, when standardizing for age and sex. However, Brown (1995) does not provide any specific cost data. In a comparative cost-effectiveness study of home and hospital based psychiatric treatment in Québec, Fenton, Tessier, Struening, Smith, Benoit, Contandriopoulos and Nguyen (1984) found that over a two year period, hospital-based treatment for each of the three diagnostic groups studied was more expensive than home-based treatment. In a recent study conducted in Edmonton, Jacobs et al. (1995) found that the break even point for early discharge from a hospital was one day for surgical patients (that is, one day of hospital care was equivalent in cost to the whole post-discharge program of home care). The break even point was three days for patients on medical wards.

A recent Canadian study based on data from the Canadian Study of Health and Aging (CSHA) (Hux, O'Brien, Iskedjian, Goeree, Gagnon & Gauthier, 1998) looked at the costs of caring for individuals with Alzheimer's disease for 750 individuals. The authors found that costs increased significantly in relation to the severity of the disease. The annual societal cost was estimated to be \$9,451 for those with a mild disease and \$36,794 for those with severe disease. This study provides detailed cost estimates for both formal and informal care services. While the authors did not do a direct comparison of all costs for community and residential services they did provide comparative costs for component parts of their analysis. Comparing the community and facility costs for those with severe Alzheimer's disease indicates that the cost of residential care is significantly higher than the cost of care in the community.

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<sup>37</sup> While British Columbia does not have capitation funding *per se*, the Continuing Care Division had a fixed annual budget for all home, community and residential services for the province.

## **Informal Supports**

While there is a considerable literature on the nature and importance of informal support, very little of this literature contains cost-effectiveness data. Logically, one can understand that it should be more likely for one to have to provide formal support where informal support is not available. However, there is currently little data to demonstrate this proposition empirically. In fact some writers (Penning & Chappell, 1990) note that informal care coexists as a unique and complementary form of care in relation to self care and formal care.

Overall, the findings are confusing and more work on informal supports is required. It is estimated that 80 percent of the care provided to the elderly is provided by informal supports and that 90 percent of the elderly with functional health limitations rely in whole or in part on informal care (Chappell, 1990a, 1990b; Penning and Chappell, 1990). This, however, does not tell the whole story because informal support is only cost-effective to the extent it is a true substitute for formal care. Chappell and Blandford (1991) note that the informal and formal systems are complementary. They found that the formal system is used when critical elements of the informal system are lacking and when there is an intact informal system but health needs are extremely high. In the first case, one could argue that there is a type of substitution effect for gaps in the informal system.

In contrast to the above, Svensson, Edebalk and Persson (1991) found in a Swedish study that there was an annual cost differential of some 16,000 Krona (about \$2,750 Canadian) per person between people who had informal and family supports and those who did not. In addition, in a Canadian study Shapiro and Tate (1985) looked at the predictors of nursing home use and found that persons without informal supports were more likely to be admitted to nursing homes than those who had such supports.

It is interesting to note that, for this topic area, most of the documents found were from Canada or Sweden, not the United States. As noted earlier, one must analyze findings in the context of the overall, existing care system. This may explain why empirical findings do not necessarily match the logic which says that informal supports are a substitute for formal supports. Chappell (1992) makes an insightful point when she notes that in Manitoba, and Canada in general, one only receives formal care to the extent that the informal care system can not look after one. Béland (1985) makes a similar point when he notes that clients who were on home care programs were less likely to have informal support systems. In other words, because of single entry and coordinated assessment and case management, the system is efficient, and because it is efficient, informal and formal care complement each other. This, however, begs the question of what would happen to the formal care system if there was a significant decrease in informal supports.

## **Systems of Service Delivery**

There is essentially no published literature on the relative cost-effectiveness of overall systems of continuing care.

Day (1984) notes that, in a study of utilization patterns for home care in the United States, individual characteristics had less of an effect on utilization patterns than external "systems" factors. He found that the best predictor of both the intensity and duration of care was the insurance plan or "pay" plan that clients had on entry to care.

In a series of papers, the Norwegian writer Svein Olav Daatland (1987, 1991a, 1991b) compares a number of factors such as the relative institutionalization rates for the elderly across the Nordic countries. He notes for example that Denmark, with relatively lower rates of institutionalization and higher rates of home care, seems to have a cost-effective system, particularly in contrast to Finland which has relatively high rates of nursing home care and low rates of home care. He provides some hypotheses about why differences exist across the Nordic countries.

Other writers such as Shapiro (1991) in Canada and Barker (1987a), writing about Great Britain, point out the importance of addressing the overall system of care but do not provide specific cost-effectiveness data.

## Discussion

An important finding of this literature review is that future analyses of the cost-effectiveness of continuing care services need to acknowledge and discuss the nature of the overall system of service delivery. A great deal of work still needs to be done before we can have a clear picture of the cost-effectiveness of continuing care service delivery systems. The importance of this systems perspective is most evident in the discussion on whether or not home and community based services are a cost-effective alternative to residential care. Given the importance of this perspective, it was discouraging to find relatively little literature on this topic, and almost no studies on the comparative efficacy of different systems.

Another important finding was that there is, at best, a relatively modest Canadian literature on the cost-effectiveness of continuing care services. The issue of whether or not home and community based services are cost-effective alternatives to residential care is still unresolved. Careful thought must be given to the design of a research study which would collect a range of data on formal and informal costs and on outcomes for clients in residential settings and home and community based settings, and compare costs, within care levels, for these two groups. There may also be a significant potential for cost savings by substituting home care for care in an acute hospital.

## CHAPTER 5: SETTING A CONTEXT FOR THE ANALYSIS

### Introduction

There are a number of issues which must be addressed in selecting the model of analysis and the methods to be used in any study. Three of the major issues relate to the context in which a study takes place, the selection of the most appropriate analytical approach, given the existing context, and selection of the actual methods used to collect and analyse data. For example, different analytical designs and methods may be selected if the context in which the study takes place is fairly stable compared to if it is turbulent and characterized by ongoing change. This chapter will address the issues of the organizational context, the analytical model selected, and the methods used for this study.

### The Study in Context

The period of this study, from late 1983 to early 1994, was a relatively stable period in the way the continuing care service delivery system was structured. It was also relatively stable in terms of policy and the overall vision of the system. During this period priority was given to the policy that individuals should be cared for in their homes and communities, for as long as it was practical and safe to do so, rather than in residential long term care facilities.

The priority on home and community based care was based on both a philosophy of care and on practical realities. As noted previously, British Columbia went through a very severe recession in the early to mid-1980s, which placed considerable fiscal pressure on the continuing care system. To deal with these pressures, and to reflect the philosophy of care provision in the home and community, the decision was made to freeze new construction of facility beds in the early 1980s. This allowed for the preservation of the home and community based system, as neither new nor existing resources were used to increase bed capacity.

In order to deal with severe fiscal pressures in the facility sector, a new reimbursement system was implemented in April 1984 which corrected an imbalance that had developed over the years in funding for the for profit and not-for-profit sectors. Overall, bed capacity was kept relatively constant between the mid-1980s to the mid-1990s<sup>38</sup>, although planning for new facility development was reinstated in the late 1980s on a gradually increasing scale.

With regard to extended care hospital services, there continued to be a gradual increase in extended care beds in hospitals to keep up with population growth until the late 1980s. There was a gradual decrease in the utilization rate of extended care beds starting in the early 1990s as bed

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<sup>38</sup>The number of residential care clients was 22,483 in the 1985/86 fiscal year (BC Ministry of Health, 1987. *Annual Report 1985/86*, p. 44) compared to 22,914 in the 1994/95 fiscal year (BC Ministry of Health, 1996. *Annual Report 1994/95*, p. 80).

supply did not keep up with the population growth of seniors (Hollander and Pallan, 1995).

With regard to the user pay portion of long term care facility beds, the user fee represented an amount equivalent to 75 percent of Old Age Security (OAS) and Guaranteed Income Supplement (GIS) throughout most of the 1980s. This amount, which was adjusted over time to reflect changes in federal OAS/GIS payments, represented the total user fee to be paid irrespective of income. In the 1993/94 fiscal year a change was made so that individuals could be charged up to a "room and board" equivalent fee (about \$34 per day) depending on their ability to pay. Those on OAS/GIS were required to pay 85 percent of the OAS/GIS amount. (There had been a shift from 75 percent of OAS/GIS to 85 percent from the late 1980s to the early 1990s).

A major initiative in continuing care in the 1987/88 fiscal year was the provision of significant increases in salaries to homemakers. It was brought about by a growing concern regarding the viability and quality of the homemaker sector. Homemakers received low wages and there was high turnover. It was felt by senior policy makers in the Ministry of Health that increasing homemaker salaries would stabilize the industry and, thus, assist in maintaining the policy focus on home and community services.<sup>39</sup>

Another initiative during this period was the development of a new planning and resource allocation model for continuing care (Hollander and Pallan, 1995). This model was developed in 1989, was fully implemented in the 1990/91 fiscal year, and remained in place until the 1993/94 fiscal year. This age and sex adjusted model allowed for the pro-active reallocation of funds from residential services to home and community based services. The model was unique in that it encompassed the full range of home/community and residential continuing care services.

Thus, the period from late 1983 to early 1994 was one of relative stability in philosophy, policy and program operations. The changes that did take place were consistent with the overall philosophy and goals of continuing care. Changes were generally technical or fiscal changes in regard to payments to providers. Moderate increases in user fees also occurred during this period.

After this period, in the 1994/95 fiscal year, a major policy change was made such that clients who were receiving low levels of home care (e.g., cleaning, meal preparation) would no longer be eligible for continuing care services. Such clients were cut off from receiving further service. The proportion of homemaker clients taken off the rolls varied across health units but was significant in some areas. The 1994/95 fiscal year also marked the beginning of the actual shift to regionalization which was completed by the 1997/98 fiscal year. With regionalization, there have been numerous changes in the organization and operation of continuing care services across British Columbia.

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<sup>39</sup>While there is little published information to document this initiative, it is reflected in the budget increase for home support and clinical services of 151.6 percent between the 1984/85 and 1992/93 fiscal years. This compares to an increase of 112.8 percent for facilities and 98.1 percent for assessors/case managers (Table 2-4, Chapter 2 of this study).

## Selection of the Analytical Approach

### Introduction

As noted by Drummond et al. (1987), economic evaluation deals with both the costs and consequences (or outcomes) of different types of services. Generally, there are variations in both the costs and consequences of services and, thus, some variant of cost-effectiveness, cost-utility, or cost-benefit analysis is required to develop ratios of costs per amount of benefit received. If the consequences are the same, and are shown to be so through direct studies or a review of the literature, then a variant of cost-effectiveness analysis called cost-minimization analysis is deemed to be appropriate. In cost-minimization analysis, one takes the consequences or benefits of service to be equivalent across the types of services studied. Thus, the key question becomes one of comparative costs, that is, which service provides equivalent benefits at the lowest cost. This section will provide an analysis based on the literature of the comparative consequences or benefits of home and community based care compared to care in long term care facilities in order to determine whether or not a cost-minimization analysis would be appropriate for the analysis of the three cohorts of British Columbia continuing care data analyzed in this study.

### Literature Review

A comprehensive literature review using the MEDLINE, HealthSTAR, CINAHL and EMBASE databases was conducted. The outcome measures included in this literature search included health status, cognitive status, quality of life, client satisfaction, and caregiver burden. A general category of evaluation "outcomes" was also included in the analysis. The literature search was structured to include articles which contained one or more outcome measures for both the home/community sector and the residential long term care sector. In order to reduce the bias inherent in comparing outcomes for home/community services versus residential services across different time periods, policies, and systems of care, the literature search was restricted to articles which compared the two sectors at the same point in time and in the same community. Table 5-1 presents the search strategy used for MEDLINE; parallel searches were conducted for the other databases.

Upon review of the selected articles or abstracts, the finding was that there were relatively few references which provided a direct comparison of outcomes for home/community services compared to residential services. There were even fewer references which used randomized clinical trials or quasi-experimental designs. This may be attributable to the ethical difficulties of randomly assigning eligible clients to home/community care or residential care. Nevertheless, given the comprehensiveness of this review, the findings presented in this section are believed to provide an accurate reflection of current knowledge about the comparative outcomes of home care versus residential care. The consistency of the findings across studies serves to increase confidence in the findings as it is unlikely that any existing bias would allow for such consistent findings.



Table: 5-1

Subject Headings and Keywords Used in the MEDLINE Literature Search

| SUBJECT HEADINGS   | KEYWORDS  |
|--|---|
| Continuing Care  |   |
| <u>Home Care Component</u>   | <u>Home Care Component</u>  |
| Home care services   | home health care  |
| Home nursing   | community long term care  |
| Homemaker services   |   |
| <u>Facility Care Component</u>   | <u>Facility Care Component</u>  |
| Nursing homes  | chronic care  |
| Homes for the aged   | extended care   |
| Intermediate care facilities   |   |
| Skilled nursing facilities   | <u>System of Care Component</u>   |
| Long term care   | integrated care AND (elderly OR aged OR aging OR old age OR senior: OR geriatric:)                                  |
| <u>System of Care Component</u>  | SHMO: OR social health maintenance organization: AND (elderly OR aged OR aging OR old age OR senior: OR geriatric:) |
| Delivery of health care, integrated AND (elderly OR aged OR aging OR old age OR senior: OR geriatric:) | Program for All Inclusive Care for the Elderly  |
| Quality of Life/Client Satisfaction  |   |
| <u>Quality of Life Component</u>   | <u>Quality of Life Component</u>  |
| Quality of life  | quality of life   |
| <u>Client Satisfaction Component</u>   | <u>Client Satisfaction Component</u>  |
| Patient satisfaction   | patient satisfaction  |
| Consumer satisfaction  | client satisfaction   |
|  | consumer satisfaction   |
|  | caregiver satisfaction/care giver satisfaction  |

Subject Headings and Keywords Used in the MEDLINE Literature Search (Continued)

| SUBJECT HEADINGS   | KEYWORDS         |
|--|------------------|
| <b>Cognitive Status</b>  |                  |
| dementia   | cognitive status |
| Alzheimer disease  | mental status    |
| mental status schedule   |                  |
| cognition disorders  |                  |
| cognition  |                  |
| awareness  |                  |
| “delirium, dementia, amnesic, cognitive, disorders”  |                  |
| <b>Health Status</b>   |                  |
| Health status  | n/a              |
| <b>Outcome and Process Assessment</b>  |                  |
| “outcome and process assessment (health care)”   | n/a              |
| “outcome assessment (health care)”   |                  |
| “process assessment (health care)”   |                  |
| <b>Caregiver Burden</b>  |                  |
| Search String: Caregivers (subject heading) AND burden: (keyword) OR care: burden: (keyword) |                  |

### Client Outcomes

Hulsman and Chubon (1989) conducted a study of the quality of life of 20 home care clients and 20 residential clients in the United States. They hypothesized that nursing home residents may rate themselves more favourably in comparison to other residents with dementia while home care clients may rate their quality of life as lower because they may compare themselves to healthy peers living in the community. Nevertheless, Hulsman and Chubon (1989) found that both groups had virtually identical quality of life scores.

Sherwood, Morris and Ruchlin (1986) conducted a study of the quality of life for clients in nursing home (n=49), geriatric day hospital (n=49) and seniors centre programs (n=37). Data for the study were collected through direct interviews. Quality of life indicator data were collected at baseline and nine months later, and comparisons were made between each set of two services (for example, nursing home and seniors centre, day hospital and seniors centre). Of the 13 measures related to community integration and feelings of contentment there were no differences across the three sites on 10 of the 13 measures used in the study. Comparing nursing homes and seniors centres it was found that those in the seniors centres had more days out of the house and attended more social activities with friends and neighbours. With regard to the 20 measures used for promoting skills for independent living there was no difference across sites on 15 measures. In comparing seniors centres and nursing homes it was found that those in seniors centres were more likely to attend recreational and social activities independently and were better able to cope with activities of daily living. Like most studies, this one did not stratify clients by level of care.

Braun and Rose (1987) conducted a study of clients in nursing homes (n=79), geriatric foster homes (n=79) and the client's own homes (n=80) in Honolulu, Hawaii. Home care was provided by the state's Nursing Homes Without Walls program. The authors found that the three sites served clients with different levels of disability. However, when controlling for the extent of disability, it was found that clients in the two community groups, that is, geriatric foster care and home care "... made greater within-group improvement in self-care skills and mobility, had similar types and frequencies of morbidity, expressed greater well-being, and cost Medicaid less for their basic care during their first three months of placement than did the patients in nursing homes" (Braun & Rose, 1987, p. 396).

In a more recent American study, conducted in California, Moss, Oppenheimer, Casey, Cozzolli, Roos, Stocking and Siegler (1996) studied clients with amyotrophic lateral sclerosis (ALS) who were receiving long term mechanical ventilation (LTMV) at home (n=36) and in chronic care facilities (n=14). They found that clients at home had higher quality of life (7.2 versus 5.6 on a 10 point scale;  $p=0.0052$ ) and that their yearly expenses were less (\$136,560 versus \$366,852;  $p=0.0018$ ).

In an Italian study, Urciuoli, Dello Buono, Padoani and De Leo (1998) assessed the quality of life of the "oldest olds" (those 95 years of age or older) with regard to their quality of life in nursing homes (n=29) and at home (n=37). They found that while the group in nursing homes had

lower Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL) scores, "... no other differences emerged between the two groups in the other areas concerning perceptions of quality of life explored by both questionnaires (physical health, cognitive functions, depression and anxiety, sexual functioning, social functioning and religiousness)" (Urciuoli, et al., 1998, p. 507).

Rothman, Hedrick, Bulcroft, Erdly and Nickinovich (1993) conducted a study of Veteran's Administration adult day care centres in Washington State. In a subgroup analysis for their study they compared client satisfaction with care in nursing homes and adult day care centres and found higher levels of satisfaction in the adult day care centres than in the nursing homes.

The Program of All-Inclusive Care for the Elderly (PACE) programs use adult day centres as the locus of client coordination. While they did not make a direct comparison with nursing homes, Eng, Pedulla, Eleazer, McCann and Fox (1997) found that there was good consumer satisfaction with the PACE programs which had been implemented.

In a British study of those receiving long-stay hospital care compared to those receiving community based care, Challis, Darton, Johnson, Stone and Traske (1991) found that those receiving community care had a higher quality of life and that there was no greater stress upon their informal care providers. In a Canadian study of hospital and home based parenteral nutrition, Detsky, McLaughlin, Abrams, Whittaker, Whitwell, L'Abbe and Jeejeebhoy (1986) found that the home care group had an increase in survival adjusted quality of life of 3.3 years compared to those treated in the hospital.

With regard to hospice based care in the United States, Morris and Sherwood (1987) found that changes in the quality of life of terminal cancer patients were similar for clients in nursing homes and in the community. Hanson, Davis and Garrett (1997) conducted a study of informal caregivers of persons who had died of chronic disease in North Carolina. When they asked these caregivers to make positive or negative comments about the care process, 91 percent of comments for hospice care were positive compared to 51 percent for care in nursing homes.

There is a somewhat more extensive literature on caregiver burden and it is also somewhat more mixed. In general, one would assume that caregiver burden decreases once the client is admitted to a facility. The literature, however, indicates that the burden may not, in fact, be decreased.

In an Australian study, Wells and Jorm (1987) randomly assigned clients to a new dementia unit in a nursing home and to a waiting list with support through respite care. All clients lived in the community at the point of random assignment and were followed for a three month period. They found that psychological symptoms of caregivers were reduced once the client was placed into a long term care facility. In contrast, Stephens, Kinney and Ogrocki (1991) found, in an American study, that there was no difference between informal caregivers caring for people at home and in nursing homes in their level of depression or somatic complaints. Controlling for caregiver problems, they

found that informal caregivers of clients in nursing homes reported more stressors related to ADL assistance, their relative's behavioural and cognitive functioning, and lack of support from family and friends. A Korean study by Lee, Kim and You (1997) also reported greater stress for caregivers whose family members were in nursing homes. They had more difficulties from disturbed sleep, disrupted children's studies and limited personal life while those who provided care to community living clients had greater satisfaction in serving as a model for their children and in practicing religion.

There are also studies which indicate that while the burden may be somewhat different for caregivers of clients in nursing homes compared to home care, the overall level of burden is about the same for both groups. This was the finding for studies conducted by Dellasega (1991), Stephens, Ogrocki and Kinney (1991) and Lofgren, Bucht, Eriksson and Winblad (1992).

With regard to British Columbia, there were two studies which address outcome issues. Hollander and his colleagues (1993), reporting on a 1987 British Columbia study of client satisfaction with facility and homemaker services in an unpublished manuscript, found that 96 percent of respondents were satisfied (that is, satisfied or very satisfied) with the care they received in their long term care facility, and that 94 percent of community dwelling clients were satisfied with their homemaker service. On a five point scale, facility clients' responses averaged 4.62 when they rated 16 aspects of care. The lowest score was 3.65 for food, and the highest was 4.75 for the friendliness of nurses. The average satisfaction score for responses given by key client contacts such as family members was 4.72. The average satisfaction rating by homemaker clients was 4.68 for seven aspects of care. The highest score, 4.91, was for the friendliness of the homemakers, and the lowest score, 4.13, was for the amount of time the homemakers spent in the home. The average satisfaction score for responses given by key client contacts was 4.57.

High levels of satisfaction with care were also reported by Penning and Chappell (1996) in a study of home support clients in Victoria, BC. They found that 79 percent of home support clients in Victoria were very satisfied with the quality of all of the services they received. In addition, 18 percent were somewhat satisfied for a total satisfaction rating of 97 percent, a rate similar to that found by Hollander and his colleagues (1993). Penning and Chappell also found that 89 percent of clients were very satisfied with the costs of care and that 8 percent were somewhat satisfied, for a total of 97 percent.

Based on the above review there seems to be good evidence to indicate that outcomes for home care services are as good or better than outcomes for care in facilities. However, the existing literature on this topic is relatively sparse. In order to determine whether or not there may be evidence to contradict the findings of equal or better outcomes for home care an additional review was conducted. Hollander (1996) conducted an extensive literature review of the cost-effectiveness of all components of the continuing care system. This included an analysis of home care compared to hospital care, another form of residential or institutional care. The outcomes for home care were found to be generally as good or better than outcomes for hospital care.

There were also numerous articles in the literature review conducted for this present study which compared home care and hospital care. Again, outcomes for home care, particularly for matters such as client satisfaction and quality of life, were as good or better than the outcomes for hospital care.

While the major channeling demonstration studies in the United States did not directly compare home and community based services to nursing home care they did compare an enhanced home care program using two models of case management with existing community programs. In analyzing the channeling data, Applebaum, Christianson, Harrigan and Schore (1988) found that there were no significant differences between channeling and existing services on mortality. However, channeling had a positive effect on client and caregiver well-being. Kemper (1988) found that channeling benefitted clients and their informal caregivers by providing increased services, reducing unmet need and increasing confidence in the receipt of care. Greater satisfaction with arrangements for care and greater life satisfaction were also found. Rabiner, Mutran and Stearns (1995) found that both channeling models had favourable direct and indirect effects on client satisfaction.

In conclusion, the review of the literature has indicated that over a wide range of outcome measures such as client and caregiver satisfaction, quality of life, health status, and caregiver burden there is relatively little evidence of a difference in outcomes between home care and residential care. Any differences which do exist seem to indicate that outcomes may be slightly better in home care than in residential care. In addition, the evidence also indicates that outcomes are as good or better for home care compared to hospital care and that new coordinated home care programs were found to have better outcomes than existing health and community services for the elderly in the United States.

Given these findings, and the lack of any degree of contrary findings, it is the view of this writer that the weight of the evidence is substantial and that the onus of responsibility for any claim that the outcomes for home care services are not as good as those for residential care must now shift to those who would wish to make such a claim. Thus, given the findings of no difference in outcomes, or slightly more favourable outcomes for home care, it is appropriate to conduct a cost-minimization analysis to determine whether home care or residential care is less costly, and, therefore, more cost-effective. This comparative cost analysis is presented in the following chapter.

## Methods

### Source of the Data

The data used for the analysis in this study were obtained from the University of British Columbia (UBC) which maintains a linkable longitudinal database with data for hospitals, physicians, drugs, continuing care and some aspects of vital statistics. UBC's Centre for Health Services and Policy Research (CHSPR) has done extensive work to link data by developing

probabilistic linkages. Tests indicate a very high degree of accurate matches. More recently, after the advent of the unique health number in British Columbia, linkages have been made using this unique health number (Chamberlayne, Green, Barer & Hertzman, 1998).

Data for this study are from three cohorts, that is, new admissions 65 years of age or older to continuing care for the 1987/88, 1990/91 and 1993/94 fiscal years. The data analyzed include cost and utilization data for hospitals, fee-for-service physicians, Pharmacare, residential long term care (including extended care beds in hospitals), direct care (home nursing care, community physiotherapy and occupational therapy), homemaker services, and adult day care services. For each of the three cohorts, client data were obtained for the one year prior to assessment and the three years after assessment. For example, if someone was assessed on March 31, 1988 (the last day for the 1987/88 cohort), data would have been extracted from April 1, 1987 to March 31, 1991.

In order to obtain the data housed at the University of British Columbia, researchers are required to make a data request to the BC Ministry of Health and Ministry Responsible for Seniors (hereafter referred to as the Ministry of Health). A request for the data for this study was submitted to the Ministry of Health on March 6, 1998. Approval for access was obtained on April 23, 1998. The actual data were received from the Centre for Health Services and Policy Research in June 1998.

One reason that the 1987/88 fiscal year was selected was because this writer was involved as a co-investigator with members of UBC's CHSPR in a National Health Research and Development Program funded study which provided the resources to collect and enter data for the full assessment form for the 1987/88 fiscal year for clients aged 65 years of age or older (Miller, Pagliccia & Barer, 1998). In general, relatively few items from the assessment form are computerized in British Columbia. The 1987/88 cohort thus provided useful information on client characteristics and service needs which was not available for the other cohorts.

#### Nature of the Data and Data Quality

There were a number of assumptions which were made about the nature of the data which had to be revised once the process of data review and clean up commenced. It was initially thought that clients who were assessed as requiring home/community care or residential care would, in fact, enter continuing care and receive the care designated at their initial assessment. This proved not to be the case. Many clients had multiple assessments and some 19 percent had a reassessment before they ever started service. In addition, the data files obtained from UBC also contained data on clients who were ineligible for service based on need, age, residency or other such reasons, and on clients who were assessed and approved for care but who refused the care offered. There was a great deal of work and a great deal of learning in regard to cleaning up the data and conducting the analysis. One had the impression of peeling an onion in that as soon as one had peeled off one layer of complexity one had to start on another layer, and another, and so on.

The initial task in preparing the data for analysis was to check for duplicates, ensure responses were within allowable ranges, and conduct other related edits. Initial inspection of the

data revealed that there was a great deal of activity for a significant proportion of clients. In terms of the volume of activity, Table 5-2 provides an overview of the number of assessments prior to the commencement of care. Table 5-3 presents information on the number of assessments in the first year, including the initial assessment. Both tables also present data on a group of clients who had an initial assessment but did not receive care. One would expect about two assessments in the first year, an initial assessment and a follow-up assessment to see how clients are doing after the start of care. However, one can see from Tables 5-2 and 5-3 that there was a great deal of additional assessment activity.<sup>40</sup>

An analysis of the data revealed that there was so much change and movement in the system that there would be a significant loss of cases for analysis if one were to only study clients who were both assessed for, and received, home/community or residential care. Table 5-4 provides a comparison of the actual care received in the first year of care (for the 1987/88) cohort with the service which was approved at assessment.

Only 83 percent of community clients, and 58 percent of adult day care and facility clients, actually received the service(s) approved on their first assessment in the first year after assessment. There were also significant numbers of persons who died and who changed their type of service or level of care. The problem of how to do an adequate cost comparison, with an adequate sample, was quite challenging as even people who were assessed as needing facility care, and who received facility care, could still change care levels in the facility setting. Thus, it was felt that there may not be an adequate number of clients who were in the same type of care and at the same level of care for an appropriate period (for example, six months or a year). Even if one were to have an adequate sample size, it was felt that such a highly selected sample may not be representative of all individuals receiving continuing care services.

In order to deal with the above problem it was decided to use the concept of a full time equivalent (FTE) client for this study. This method, which is explained more fully in the following section, allows the analyst to take a period of time and to include into the analysis all clients who received care during that time period, not just clients who were at the same type and level of care for the duration of the time period. It was decided to break the overall episode of care into discrete care segments for home/community services and residential services. All service utilization, across all service categories, was then included in that segment. For example one client may be at the IC2 level and be receiving community services (homemakers or adult day care) for the whole time period. Another community IC2 client may be in that status for only two weeks. If the time period for analysis is six months, all IC2 home/community days would be added together for the two clients, that is, two weeks and six months would be added together. The total number of days would then be divided by the number of days in the time period to derive the number of FTE clients. For each time period, attendant service utilization data, for all services including MSP, hospital care and

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<sup>40</sup>Data from the 1990/91 and 1993/94 cohorts are similar to the data for the 1987/88 cohort presented in Tables 5-2 and 5-3.



Table: 5-2

Multiple Assessments in First Year Before Care: 1987/88 Cohort

| Number of Assessments | Number of Cases |               |         |
|-----------------------|-----------------|---------------|---------|
|                       | All             | Received Care | No care |
| 1                     | 14995           | 13406         | 1589    |
| 2                     | 2258            | 1970          | 288     |
| 3                     | 426             | 378           | 48      |
| 4                     | 94              | 83            | 11      |
| 5                     | 21              | 17            | 4       |
| 6                     | 10              | 8             | 2       |
| 7                     | 6               | 4             | 2       |
| 8                     | 3               | 2             | 1       |
| 9                     | 1               | 1             | 0       |
| 10 or more            | 4               | 4             | 0       |

Table: 5-3

Multiple Assessments in the First Year: 1987/88 Cohort

| Number of Assessments | Number of Cases |               |         |
|-----------------------|-----------------|---------------|---------|
|                       | All             | Received Care | No care |
| 1                     | 14995           | 13406         | 1589    |
| 2                     | 8262            | 7973          | 289     |
| 3                     | 3141            | 3093          | 48      |
| 4                     | 1225            | 1214          | 11      |
| 5                     | 502             | 498           | 4       |
| 6                     | 208             | 206           | 2       |
| 7                     | 86              | 84            | 2       |
| 8                     | 35              | 34            | 1       |
| 9                     | 21              | 21            | 0       |
| 10 or more            | 14              | 14            | 0       |

Table: 5-4

Actual Versus Approved Care: 1987/88 Cohort

|                           | <u>Number of Cases</u>      |      |                |          |         | <u>Percent</u>              |      |                |          |         |
|---------------------------|-----------------------------|------|----------------|----------|---------|-----------------------------|------|----------------|----------|---------|
|                           | <u>Care Received (1 yr)</u> |      |                |          |         | <u>Care Received (1 yr)</u> |      |                |          |         |
|                           | All                         | Both | Community Only | Facility | No Care | All                         | Both | Community Only | Facility | No Care |
| All                       | 14995                       | 1048 | 9389           | 1649     | 2909    | 100                         | 100  | 100            | 100      | 100     |
| <u>Assessed Type</u>      |                             |      |                |          |         |                             |      |                |          |         |
| Not Eligible              | 520                         | 20   | 88             | 32       | 380     | 100                         | 3.8  | 16.9           | 6.2      | 73.1    |
| Declined                  | 1413                        | 66   | 306            | 82       | 959     | 100                         | 4.7  | 21.7           | 5.8      | 67.9    |
| Home Care                 | 10290                       | 702  | 8556           | 146      | 886     | 100                         | 6.8  | 83.1           | 1.4      | 8.6     |
| Home Care (Mental Health) | 94                          | 9    | 64             | 12       | 9       | 100                         | 9.6  | 68.1           | 12.8     | 9.6     |
| Facility                  | 2377                        | 175  | 200            | 1366     | 636     | 100                         | 7.4  | 8.4            | 57.5     | 26.8    |
| Adult Day Care            | 301                         | 76   | 175            | 11       | 39      | 100                         | 25.2 | 58.1           | 3.7      | 13      |

so on, would be linked to the time period for that care segment.<sup>41</sup> This would then allow for an analysis which would estimate service utilization across all classes of service for the given time period for the FTE IC2 home/community client. As shall be seen later, data were further partitioned into those who remained in the same status over time and those who changed status (for example, went from a home/community IC2 to a home/community IC3, or to a facility IC3). The advantage of this approach is that it allows for a direct comparison of costs, by level of care, for home/community services and residential services, without a significant loss of data for the analysis. It also allows for a realistic and comparative analysis of those who move and change their status while in the system with those who are relatively stable. There are significant cost and utilization differences between these two groups, particularly for the subset of those whose status changed because they died.

<sup>41</sup>As an example, an IC2 homemaker client who was in one of the six month periods for two weeks may have had 3 days of hospital care, two visits to a physician and four hours of home care. Each of these records of service would be linked to the two week care segment.

### Data Validation and Cleaning Procedures

Each data set was analyzed for potential data related problems by inspecting the ranges of each variable to be used in the analysis. MSP and Pharmacare data provided information on the number of billings and costs. Numerous types of distributions, including unit costs and service utilization distribution, were analyzed and a number of anomalies were found. For such anomalies a detailed visual inspection of each separate record was conducted. For these two data sets it was found that even though some clients had extreme scores, the scores were actually valid. This is reasonable given that in both cases the databases are used to pay providers and, therefore, go through innumerable checks to ensure the accuracy of payment. An example of a data anomaly that was found to be accurate was one for three prescriptions totalling over \$3,000. Inspection of the data revealed that these items were for prostheses which cost about \$1,000 each. Another anomaly was unusually low average costs and large numbers of prescriptions for some clients. Again, through further inspection of prescription records it was found that these clients had valid records. For example, one client had 122 prescriptions over a one year period at an average cost of \$2.91. Visual inspection of these 122 records revealed the accuracy of this average.

The drug-related data used for this study are Pharmacare Schedule A data which are data for all community dwelling individuals 65 years of age or older and Pharmacare Schedule B data which are data for individuals in long term care facilities. Schedule B, however, does not include the costs of drugs in extended care facilities where drugs come under the pharmaceutical portion of the hospital budget. During the period of the study there was a modest co-payment of 25 percent of the total for Schedule A drugs, up to a maximum of \$100 per year. This co-payment was increased to \$200 on April 1, 1994.

Analysis of the hospital data revealed large numbers of individuals who were in hospital for long periods of time. It was found that a significant portion of the clients were extended care clients. In the BC continuing care system extended care clients are generally treated in extended care units which may be stand alone hospitals, or wings of acute care hospitals. Their bed days are recorded in the hospital database. However, in order to obtain access to such hospital based extended care services, clients must be assessed through continuing care. Thus, the continuing care database contains a record of extended care clients even if they are in extended care wards in hospitals.

The document used to authorize access to all long term care services is the "Care Advice" form. A care advice form is completed to order services for new clients. After the initial service order, a care advice form is filled out for any change from approved service such as a change of service, a change in care level, discharge or death.

It was found that there were considerable overlaps in dates between extended care and acute care stays in hospital. Thus, there may have been less than optimal recording of internal transfers within hospitals. In addition, stand alone extended care hospitals do not complete hospital abstracts and, thus, are not included in the hospital database. In order to deal with these issues it was decided to base the estimate of the number of extended care days in this study on information from the care

advice form. Given that extended care hospital days were calculated based on the care advice form, the extended care flag in the hospital data was used to exclude all extended care days from the analysis for counts of days in acute care hospitals. However, all other types of hospital days are included in the count of acute care days.

Inspection of the hospital data also revealed a modest number of very long stay individuals and individuals who were registered as being in both long term care facilities and in hospitals simultaneously. There are a number of potential reasons for these anomalies including data entry errors and possible problems with the probabilistic linkage conducted at UBC. Anecdotal reports also indicate that there may have been recording errors in hospitals such that long term care clients who were supposed to be in long term care beds were registered, by the hospital, as being in acute beds. This may have accounted for some of the long stay cases where clients were registered as being in acute care and residential care simultaneously. While a few clients may indeed have been in acute care for long periods of time, such cases were as or more likely to be recording errors. Even if they were legitimate cases, one can question whether clients who spend most of their time in a hospital (for example, clients who are in hospital for one year) are in fact still continuing care clients as opposed to being acute care clients.

To deal with these matters it was decided to exclude from the analysis any client who had a hospital care episode of more than six months. Given that long term care facilities will generally hold a bed for someone who goes into hospital for a short period of time, an analysis was conducted to determine how many clients were registered as being in long term care and acute care simultaneously for more than three months, after clients with a stay of more than six months were excluded. The intent was to make an adjustment by not counting the hospital portion of the stay. It was found that there were few clients who fell into this category so no adjustment was made.

While it appeared that the database for direct care services (nursing, PT/OT) was generally reliable it had the most anomalies. Direct care services are not ordered through the same care advice form as long term care community services such as homemakers and adult day care. Data on visits are recorded every 6 months for active clients, and at discharge on a separate direct care database. Inspection of the data revealed clients who had very few visits and clients who had large numbers of visits.

Direct care services can be provided on an intensive basis for short periods of time. Thus, the following exclusion criteria were used for care episodes. A care episode (but not the client) was excluded if it averaged more than five visits per day for stays of 1 to 14 days, more than four visits per day for stays of 15 to 89 days and more than three visits per day for stays of 90 days or more. In addition, care episodes which averaged less than 0.5 visits per month were also excluded. Policy and common practice were used to derive these cut-off points. While complex clients may have multiple visits per day, it is unlikely that many would have more than three visits per day for a sustained period. If there were such clients it would mean the direct care costs reported in this study are lower than the actual costs. The criterion of a minimum of 0.5 visits per month was based on discussions with experts in the area. While 0.5 visits per month is quite low, the practice was to

provide limited maintenance service for some clients.

Some clients had no end dates and had no apparent continuation of service. For these clients the date of the last update was used as the end date. There were also a few clients who only had direct care and no long term care services. They were excluded from the study because one could not designate a care level as they had had no long term care assessment and were not in the Long Term Care Program.

With regard to homemaker hours, data were obtained from the care advice form which designates the number of approved hours per month. However, given that some months have five weeks, the practice is to approve hours based on a five week month in order not to exceed approved limits in such months. Previous analysis indicated that an estimate of 80 percent of approved hours was a fairly accurate estimate of the actual hours used. This analysis was conducted in the 1980s and was based on a comparison of approved hours with actual paid hours from the financial payment database. This 80 percent ratio was used to estimate the hours of homemaker service provided to clients in this study.<sup>42</sup>

No major adjustments were required for adult day care data for which utilization is based on approved numbers of days per week (usually 1-2) from the care advice form, or for long term care facility data.

#### Selection of the Sample for Analysis

The data reflected considerable complexity in the continuing care system, including clients who may have been assessed but received no care. Again, standard policy and practice was used as a guide to select the sample for analysis. Continuing care policy states that clients should be reassessed on an annual basis irrespective of the type of continuing care provided. Therefore, it was decided to include in the sample clients who received care within one year of assessment. One year seemed to be an appropriate cut-off point, particularly as there was initially a desire to link the more detailed assessment data for the 1987/88 cohort to patterns of care provision. Inspection of the data revealed that most home/community clients received service very quickly after assessment. For facility clients, some 90 percent started care within the first year after assessment. This delay is due to having to be placed on waiting lists to obtain facility care. In order to have a reasonable number of facility clients in the analysis it would not have been feasible to reduce this one year period.

After the above exclusion criteria were applied, it was found that there were a number of clients who met all of the above criteria but had short lengths of stay. This could be because they received one or more short sessions of respite care or because they died shortly after the

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<sup>42</sup>Some recent internal studies at the Ministry of Health have indicated that currently clients receive about 70 percent of approved hours. It is not clear if this was the case for the period of this study. Even if it was, the result would simply be to reduce the cost of home care clients, thereby widening any potential cost gap between home care and residential care.

commencement of care. Given that it is Ministry of Health policy only to admit clients to the Long Term Care Program who have a disability requiring a stay of 90 days or more, it was decided to also exclude clients from the analysis who received care for less than three months in the first year after the start of care. A sensitivity analysis revealed that the results in terms of average utilization per full time equivalent client were almost identical if these individuals were included or excluded. It was decided to exclude the clients because the purpose of the analysis was to provide a comparison of costs, by level of care, for home/community and residential clients who meet the criteria of being long term care clients. Table 5-5 shows how the client sample for this study was selected.

#### Method for Calculating Full Time Equivalent Clients

As noted previously, it was decided that, given the very active pattern of re-assessments and changes in care level and type of service, the most appropriate method for comparing the costs for home/community clients and residential clients was to use the concept of a full time equivalent client. To do this, all care segments (type and level of care) were broken down for each client. Given some indication in the scientific literature that costs tend to decrease over time in care (Triage Inc., 1982a, February) it was decided to conduct the cost comparison in two ways. One was to take an average for one year based on the full two year period. The other way was to calculate costs for four six month periods of time, from the point of the client's commencement of some form of actual care.<sup>43,44</sup> For care segments which crossed these six month time boundaries, the care episode was split at the six month point and treated as two segments, one for each of the two adjoining time periods.

As part of this process of creating FTE clients, care segments were designated as home/community care or residential care. In order to make the home/community designation it was necessary to merge the care episodes for homemakers and adult day care (the two home/community based long term care services). This was done in such a way as not to double count overlaps in time between a homemaker segment and an adult day care segment. These new merged segments were then used for the analysis.

For the number of days in each home/community and residential segment, dollars (and billable units) for MSP, and dollars (and the number of prescriptions) for Pharmacare, were used. Utilization data for hospitals, direct care, homemakers, adult day care and long term care facilities were also used. Services, and dollars for MSP and Pharmacare, were keyed to each segment to create a record of the type of care (home/community or residential), the level of care, and the cost and volume of services provided. Thus, if using the second method described above (six month time

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<sup>43</sup>As noted earlier, to ensure a comparable number of days in each of the four six month periods, a year was designated as being 364 days, half a year as 182 days and a quarter of a year as 91 days.

<sup>44</sup>In this study the term *First Care* is used to refer to the point at which the client received some type of continuing care service for the first time. Thus, there are two important dates for purposes of this analysis, the date on which the first assessment was conducted (the "Assessment" date) and the date on which care started (the "First Care" date).

Table: 5-5

Selection of Samples for the Study

|   | Cohort      |             |             |
|---|-------------|-------------|-------------|
|   | 1987/88     | 1990/91     | 1993/94     |
| Total client records received                           | 15259       | 16990       | 17862       |
| MINUS   |             |             |             |
| Duplicate Records                                       | 264         | 248         | 101         |
| No Assessment <sup>1</sup>                              | 109         | 0           | 67          |
| Less than 65 Years of Age                               | 2179        | 2463        | 2792        |
| Clients with No Care at All                             | 1567        | 1854        | 2422        |
| Ineligible or Declined Care                             | 507         | 287         | 343         |
| Started too Early <sup>2</sup>                          | 45          | 18          | 19          |
| Clients with No Care in the First Year After Assessment | 1316        | 1139        | 794         |
| Long Hospital Stays <sup>3</sup>                        | 84          | 92          | 47          |
| Clients with Short Stays <sup>4</sup>                   | 1237        | 1685        | 1708        |
| Outliers <sup>5</sup>                                   | 134         | 181         | 225         |
| <b>Total Samples for the Three Cohorts</b>              | <b>7817</b> | <b>9023</b> | <b>9344</b> |

<sup>1</sup>In this study a year is defined as being 364 days to ensure a standard number of days for each half year period (182 days) and each quarter (91 days). These exclusions are most likely clients who were admitted on the last day or two of the year (1988 was a leap year).

<sup>2</sup>Some clients started before the completion of their formal, first assessment. Clients who started care more than 60 days prior to their first assessment were excluded from the study.

<sup>3</sup>Clients with a continuous hospital stay of over 182 days were excluded from the study

<sup>4</sup>Clients with 91 days or less of care in the year after their first care were excluded from the study.

<sup>5</sup>Outliers are clients who had values which were more than five standard deviations from the mean for the average cost of MSP services, cost of prescription drugs, number of days in hospital, direct care visits, homemaker hours and direct care days for the two year period after the beginning of care. The five standard deviations criterion was used because the distributions for costs and utilization were quite skewed with most clients having relatively low levels of service and decreasingly small numbers having increasing amounts of service.

periods) to calculate costs, one could add the days for all care segments of all clients in a given six month time period, and all of the costs/services provided, to obtain totals of client days and costs/services. Costs/services per client for the time period are calculated by totaling the number of days for all care segments in a given time period, for example, 182,000 days, and then dividing the total number of days for all care segments by the days in the period, for example 182 days, to obtain the number of full time equivalent clients for the time period (that is, 1,000 FTE clients). One could then divide the total costs/services for all care segments for all clients by the number of FTE clients to obtain the average services and/or dollars for community and facility FTE clients for the time period.

For obtaining cost and utilization estimates for an average one year period, all days and units of cost and utilization were analyzed for the two year period after the start of care. The results were divided by two to obtain estimates for an average one year period.

There was considerable complexity in developing the FTE client data. Services received on specific days such as a two day hospital stay, or a visit to the doctor, could easily be assigned to the time period for a given segment because the services occurred on specific dates. However, in cases where a given amount of service was approved for a given time period, for example, 20 hours of homemaker service per month, services had to be pro-rated before they could be assigned to a given care segment. For example, if a month is defined as 30 days and the care segment is 15 days, and if the client is approved for 20 hours of homemaker services per month and it is estimated that the actual care received is 80 percent of approved care, then eight homemaker hours would be assigned to that care segment ( $20 \text{ hours per month} \times .8 = 16 \times .05 \text{ for a half month} = 8 \text{ hours}$ ).

Another issue was gaps in services. Gaps are defined as periods between the end of one care advice and the start of another care advice. There are a number of possible reasons for gaps, such as clients going away with family for a brief holiday. How long can a gap be before it is no longer the continuation of a given care segment but the start of a new care segment? This question was analysed by varying the lengths of gaps and by logic. It was decided that continuous service was one in which a new service (a start service care advice) started the day after the end (an end service care advice) of the previous segment.

Preliminary analysis of the data was based on the above approach. However, in reviewing the approach adopted, it was noted that some individuals had an end service care advice but started in hospital the next day without a start service care advice. It was decided that in such cases the acute hospital stay would also be added to the care segment. It was felt that this was a reasonable linkage and that one could properly attribute this hospital cost to the care segment. In addition, there were many care segments in which clients were registered as receiving both home care (an active care advice) and hospital care (from the hospital data). This revised procedure added approximately 10 percent more hospital days into the analysis, about two-thirds of which were for home care. It also brought the findings into much sharper focus. This will be discussed in more detail in the next two chapters.



### Methods for Calculating Costs

There is relatively little cost data, on a client specific basis, for services other than MSP and Pharmacare. The best available data for continuing care is for the 1991/92 fiscal year (Hollander, 1994). Thus, fiscal 1991/92 data were selected for use in this study.<sup>45</sup>

In addition to deriving standard costs, a method also had to be developed for standardizing the MSP and Pharmacare costs to estimated 1991/92 levels for the 1987/88 and 1993/94 cohorts in order to compare the three cohorts using standard unit costs. This was done by calculating the cost per billable unit for MSP and the cost per prescription for Pharmacare for the 1990/91 cohort for each type and level of care. These costs were then applied to the average number of billable units and prescriptions, per full time equivalent (FTE) client, for the other cohorts. Actual MSP and Pharmacare billings were used for the 1990/91 cohort.

The most difficult unit cost to calculate was that for hospital care. Case costing data were not available. In addition, it was not clear if males and females, and community and residential clients, were admitted to hospitals for similar conditions, that is, if they utilized similar or different amounts of resources when they were in the hospital.

To determine whether or not hospital utilization was similar for facility and community clients, males and females, and the five levels of care, an analysis was conducted on the 1993/94 cohort using hospital Resource Intensity Weights (RIWs). These weights are derived by applying American resource intensity ratios to Canadian Case Mix Groups (CMGs). CMGs are clusters of similar clients (for example, those 70 years of age and older who have a similar disease condition). The RIW and CMG calculations are done by the Canadian Institute for Health Information and are then provided back to the provinces.

Across Canada the average RIW is set at 1.0. For the 1993/94 fiscal year the average RIW for British Columbia was 1.25. The RIWs include length of stay in the way that they are calculated so they are a measure of the resources used for the overall care episode, not a measure of relative resource use per day. It was found that the RIW weights were very similar for males and females and for community and residential clients. For example, the average RIW, per hospital care episode, was 2.19304 for females and 2.14362 for males for the 1993/94 cohort. The corresponding values for this cohort for community and residential clients were 2.16947 and 2.21167, respectively. The RIWs were also fairly similar across levels of care with higher levels tending to have somewhat higher RIWs. However, it is also likely that clients at higher levels of care had longer lengths of stay which would reduce the per diem rate. Thus, given the relative similarity in RIWs it was deemed that it would not be necessary to make adjustments to cost estimates for community and residential

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<sup>45</sup>In this study clients have to be assessed in the target year for the given cohort. However, some clients may not start care for up to one year. In addition, the period of analysis is for two years after the start of care. Thus, it is reasonable to use estimated fiscal 1991/92 costs for the 1990/91 cohort. Ideally, one would wish to designate accurate costs for the exact time periods when care was provided.

clients, males or females, or level of care, in regard to the use of resources while clients were in the hospital.

A related issue which was analyzed was whether the hospital per diem rates were higher for seniors than for other age groups. The RIW scores for the 1993/94 cohort were some 2.1 to 2.2, signifying higher resource use than the average BC score of 1.25. However, the length of stay for seniors was about two thirds higher than for non-seniors. Therefore, if one averages out the cost of the RIW with the number of days in care, it appears that the per diem cost of a hospital stay is similar for seniors and non-seniors. Thus, it was decided to use a standard hospital per diem based on operating costs for the analysis in this study.

A number of assumptions were made in deriving the unit cost of a day in the hospital for the 1991/92 fiscal year. One method of calculating the operational cost of a hospital day would be to use the rate billed for out-of-province claims. For the mid-1990s, this rate was approximately \$575 per day for acute hospitals and \$705 per day if tertiary hospitals were included. If one uses these general acute care rates and deflates them at 5 to 10 percent per year for 3 years, one is in the range of approximately \$400 to \$500 per day for the 1991/92 fiscal year.

An analysis using data from the 1991/92 *Annual Report* and the 1992/93 *Estimates* was also conducted. Table 19 in the fiscal 1991/92 *Annual Report* (p. 109) presents the number of days of care for hospital discharges in that year. Total acute, rehabilitation and newborn days were used. In addition, extended care days and long term care days were revised to approximate acute days based on relative cost ratios of .25 and .20 of an acute bed for extended care and long term care days, respectively. This total number of acute care equivalent days was noted. In addition to inpatient days, hospitals also have clients with emergency, day care and outpatient visits. The average cost of these visits was estimated to be \$50. This figure was applied to the 15.6 million visits and the resulting number was subtracted from the "operating contributions" to hospitals portion noted for 1991/92 expenditures in the *Estimates*. The estimated four million acute care equivalent days from the previous calculation were divided into the remainder of the operating grant (some \$1.7 billion) and produced an average of \$425 per day. This is the hospital per diem rate used for the analysis in this study.

With regard to unit costs for facilities, homemakers and adult day care services, the figures in the report *The Costs, and Cost-Effectiveness, of Continuing Care Services in Canada* (Hollander, 1994) were used. These figures are based on detailed cost data from the BC Ministry of Health which this writer used to produce the report when he worked for the BC Ministry of Health. The method for calculating per diem rates, by level of care, for facility services is documented in Hollander (1994) and was successfully used to obtain per diem costs, by level of care, for Statistics Canada data. The Hollander (1994) report also has hourly costs for homemaker services and adult day care which are based on detailed financial data for British Columbia for the 1991/92 fiscal year.

Unit cost estimates were obtained for direct care staff by assuming an annual salary of \$40,000 per year, and adding 20 percent for benefits and 20 percent for administrative overhead,

supplies and so on. The resulting annual cost of \$52,000 was divided into an estimated 1,100 visits per year (220 working days at five visits per day). This resulted in a cost per visit of \$47.27 which was rounded to \$50 per visit.

Costs for assessors/case managers should be included in an analysis of the costs of continuing care services. Assessors/case managers look after both community and residential clients in British Columbia. It is estimated that the time required to case manage a facility client is about one third to one half of that for a community client. If one uses a time ratio of 0.5 for facility clients and 1.0 for community clients, and applies these ratios to the number of community and facility clients in care in a given year, one finds that approximately 90 percent of the time of assessors/case managers is spent on community clients. When this ratio is applied to the budget for assessments (in the *Estimates*), and the result is divided into the total budget for all other home and community services, one finds that the cost of assessment and case management is approximately 10 percent of home care costs. Thus, the unit cost estimates for direct care, homemaker and adult day care were increased by 10 percent to incorporate the costs related to assessors/case managers.

In terms of facility care, analysis for this study indicated that about 80 percent of extended care days were provided in extended care hospitals or extended care wards of acute hospitals. This ratio was applied to an estimated per diem for the 1991/92 fiscal year of \$115 for extended care beds in extended care hospitals. The remaining 20 percent was applied to a per diem of \$81.03 (Hollander, 1994) for fiscal 1991/92 for extended care clients in long term care facilities to obtain an estimated, blended per diem rate of \$108.21 for extended care facility clients. Thus, the unit costs used for this study for acute care and continuing care are:

|  |  |
|--|--|
| Hospital per diem                        | \$425.00   |
| Long term care facilities per diem rates |  |
| PC                                       | \$27.69  |
| IC1                                      | \$43.85  |
| IC2                                      | \$53.60  |
| IC3                                      | \$69.20  |
| EC                                       | \$108.21 (a pro-rated, blended rate for EC clients in hospitals and long term care facilities) |
| Homemaker services                       | \$15.62 + 10% for case management = \$17.18 per hour   |
| Adult day care                           | \$50.10 per day + 10% for case management = \$55.11 per day                                    |
| Direct care                              | \$50 per visit + 10% for case management = \$55.00 per visit                                   |

The estimated fiscal 1991/92 rates for MSP and Pharmacare for FTE clients for the 1990/91 cohort are presented in Table 5-6.

Table: 5-6

Cost per MSP Billable Unit and per Pharmacare Prescription: 1990/91 Cohort

|     | MSP<br>(Cost per billable unit) |               | Pharmacare<br>(Cost per prescription) |                            |
|-----|---------------------------------|---------------|---------------------------------------|----------------------------|
|     | Community (\$)                  | Facility (\$) | Community (\$)                        | Facility <sup>1</sup> (\$) |
| PC  | 24.35                           | 23.93         | 33.43                                 | 12.72                      |
| IC1 | 24.6                            | 21.84         | 31.35                                 | 14.17                      |
| IC2 | 23.93                           | 22.73         | 31.12                                 | 14.03                      |
| IC3 | 23.74                           | 22.61         | 29.73                                 | 13.67                      |
| EC  | 23.89                           | 22.71         | 30.86                                 | 14.68                      |

<sup>1</sup>The average cost per prescription for Pharmacare B data is less than half of that for Pharmacare A data for several reasons. There is no charge for a dispensing fee in Pharmacare B data. In addition, there is a greater use of generic drugs in long term care facilities and there is a policy in place which limits prescriptions to a maximum of 30 days. Costs for drugs in long term care facilities are not in the facility budgets. Pharmacare is billed directly by agencies for drugs used in facilities. Pharmacare B does not cover drug costs in extended care hospitals.



## CHAPTER 6: KEY FINDINGS

### Overview of Clients in the Study

As the full assessment form was computerized for clients in the 1987/88 cohort, this section will provide an overview of client characteristics for that cohort.

Table 6-1 presents an overview of the age and sex distribution of clients for three age groups, 65-74, 75-84 and 85 years of age or older for the 1987/88 cohort. Overall, some 36.7 percent of the sample was male and 63.3 was female. Those 65-74 years of age comprised 36.2 percent of the sample while those 75-84 and 85+ comprised 48.3 percent and 15.5 percent of the sample, respectively. A somewhat disproportionate number of males received facility care, particularly for the 65-74 years age group in which 34.7 percent of assessments were for men but men accounted for 46.3 percent of those designated as requiring facility care. The comparable ratios for males 85 years of age or older were much more similar at 36.4 and 35.5 percent, respectively.

While previous work (Hollander, 1994), has shown that the care level distribution of clients is similar across age groups, Table 6-2 indicates that there was a different pattern for the 1987/88 cohort with the most elderly tending to have a greater proportion of clients at the higher care levels. With regard to marital status, Table 6-3 shows that some 60 percent of males were married, while 65 percent of females were widowed, divorced or separated.

While about 50 percent of clients lived in a house at assessment, some 20 percent of those assessed as needing facility care, compared to eight percent of those assessed as requiring community care, lived in a room, facility or other type of setting. The rest lived in an apartment. Some 58 percent of clients owned the residence in which they lived while 42 percent did not.

A key aspect of the analysis conducted in this study was to compare costs by level of care. British Columbia is one of the few jurisdictions in Canada, if not the world, which has the same care level classification system for home/community and residential clients. However, the system is based partly on a subjective judgment by the assessor. Analysis of the data from the 1987/88 cohort revealed that clients had very similar scores for their activities of daily living, which usually form the basis of client classification (Katz et al, 1963). Table 6-4 provides a comparison of the average scores and standard deviations for the following items: ability to transfer, bathing, dressing, grooming/hygiene, eating, and bowel and bladder control. As can be seen, the average scores are essentially identical for PC to IC3 clients, while EC facility clients have a somewhat higher score than do EC clients in the community. There was a very high congruence in the level of disability, for most levels of care, between home care clients and residential clients. Thus, one could appropriately compare the relative costs of home/community clients and residential clients, by level of care, because clients were very similar in regard to their care needs.

Table: 6-1

Distribution of Age and Gender: 1987/88 Cohort

| Gender |   | Age Group at Assessment |       |      |       |
|--------|---|-------------------------|-------|------|-------|
|        |   | 65-74                   | 75-84 | 85+  | Total |
| Male   | N | 983                     | 1443  | 442  | 2868  |
|        | % | 34.7                    | 38.2  | 36.4 | 36.7  |
| Female | N | 1848                    | 2330  | 771  | 4949  |
|        | % | 65.3                    | 61.8  | 63.6 | 63.3  |
| TOTAL  | N | 2831                    | 3773  | 1213 | 7817  |
|        | % | 100                     | 100   | 100  | 100   |

Table: 6-2

Distribution of Age and Care Level: 1987/88 Cohort

| Care Level    |   | Age Group at Assessment |       |      |       |
|---------------|---|-------------------------|-------|------|-------|
|               |   | 65-74                   | 75-84 | 85+  | Total |
| Personal Care | N | 1551                    | 1974  | 493  | 4018  |
|               | % | 54.8                    | 52.3  | 40.6 | 51.4  |
| IC1           | N | 721                     | 1041  | 365  | 2127  |
|               | % | 25.5                    | 27.6  | 30.1 | 27.2  |
| IC2           | N | 279                     | 423   | 172  | 874   |
|               | % | 9.9                     | 11.2  | 14.2 | 11.2  |
| IC3           | N | 97                      | 130   | 65   | 292   |
|               | % | 3.4                     | 3.4   | 5.4  | 3.7   |
| Extended Care | N | 183                     | 205   | 118  | 506   |
|               | % | 6.5                     | 5.4   | 9.7  | 6.5   |
| TOTAL         | N | 2831                    | 3773  | 1213 | 7817  |
|               | % | 100                     | 100   | 100  | 100   |

Table: 6-3

Distribution of Gender and Marital Status: 1987/88 Cohort

| Marital Status             |   | Gender |      |       |
|----------------------------|---|--------|------|-------|
|                            |   | Female | Male | Total |
| Single                     | N | 252    | 216  | 486   |
|                            | % | 5.2    | 7.7  | 6.1   |
| Married                    | N | 1438   | 1688 | 3126  |
|                            | % | 29.8   | 60.1 | 40.9  |
| Widowed/Divorced/Separated | N | 3123   | 874  | 3997  |
|                            | % | 64.6   | 31.1 | 52.3  |
| Other                      | N | 20     | 31   | 51    |
|                            | % | 0.4    | 1.1  | 0.7   |
| TOTAL                      | N | 4833   | 2809 | 7642  |
|                            | % | 100    | 100  | 100   |

Table: 6-4

Care Levels and Average Activities of Daily Living Item Scores for Home Care and Facility Care: 1987/88 Cohort

|               | Home Care |        |               | Facility Care |        |               |
|---------------|-----------|--------|---------------|---------------|--------|---------------|
|               | N         | SD     | Average Score | N             | SD     | Average Score |
| Personal Care | 3479      | 0.2402 | 1.2           | 89            | 0.24   | 1.2           |
| IC1           | 1581      | 0.4154 | 1.4           | 234           | 0.422  | 1.5           |
| IC2           | 539       | 0.5949 | 1.9           | 167           | 0.5566 | 2             |
| IC3           | 139       | 0.7    | 2.3           | 83            | 0.6775 | 2.4           |
| Extended Care | 126       | 0.6517 | 3             | 255           | 0.5639 | 3.4           |
| All           | 5864      | 0.5115 | 1.4           | 828           | 0.9945 | 2.3           |

## Comparative Cost Analysis

Overall it appears that clients receiving facility care are a greater cost to government than clients receiving home/community based care. However, there are significant variations by level of care. There are also cost differences between clients who remained in the same type and level of care for longer periods of time and those who had changes in status during those time periods. It must, however, be remembered that there is a private pay component to most continuing care services. User fees would need to be included in a more complete cost analysis. An extreme example of the implications of the relative weight of payments by individuals versus payments by government is that in Atlantic Canada residential facility clients may be income tested and may have to pay up to the full cost of care. Thus, rich individuals may pay for the full cost of care in a facility but may receive government subsidized home care if they are in the community. Thus, for such individuals home care would constitute a greater cost to government than residential care.

Tables 6-5 and 6-6 provide an overview of service utilization and costs for MSP, Pharmacare and hospital services for the one year prior to admission and for the two years after the start of care for clients who were admitted to facility care or home care for the 1990/91 cohort. Data are presented for FTE clients in quarters. Quarter one is the period 9-12 months before the start of first care while quarter 12 is the period 21 to 24 months after the start of care.

As can be seen from Tables 6-5 and 6-6, there was a significant increase in costs and utilization for MSP services up to the point of admission for both home/community clients and residential clients. After the admission to first care, costs and utilization tended to taper off over time. There was a sharp contrast between home/community clients and residential clients in the use of hospital services. Home/community clients used less hospital services before their first care but used more hospital services than facility clients after the start of care. This was because of the very sharp drop in hospital utilization after clients were admitted to long term care facilities. Pharmacare costs tended to have a slight increase over time and did not exhibit the cost and utilization "peak" at admission to care. These patterns were consistent across the three cohorts studied and across care levels.

The severe reduction in hospital days for facility clients overall, and particularly at the extended care level, should be noted. It appears that facilities are able to care for clients in such a way as to reduce admissions to hospitals. For extended care clients, they are already in a hospital and it is likely that they would receive more care, as needed, in the extended care ward rather than be transferred to another wing of the acute care hospital.

These findings seem to indicate that a significant portion of the people admitted to continuing care appear to have had a precipitating incident, or health crisis, which may have led to their admission to continuing care, rather than being admitted to care due to a gradual deterioration of their functional status.



Table: 6-5

Comparison of Service Utilization by Quarter for the Year Prior to First Care and the Two Years After: 1990/91 Cohort

|                                  | Community     |         |        |        | Facility      |               |        |        |        |               |
|----------------------------------|---------------|---------|--------|--------|---------------|---------------|--------|--------|--------|---------------|
|                                  | Personal Care | IC1     | IC2    | IC3    | Extended Care | Personal Care | IC1    | IC2    | IC3    | Extended Care |
| <b>FTE Clients</b>               |               |         |        |        |               |               |        |        |        |               |
| 9 to 12 months prior to care     | 4434.00       | 2350.00 | 950.00 | 394.00 | 168.00        | 27.00         | 131.00 | 168.00 | 131.00 | 270.00        |
| 6-9 months prior to care         | 4434.00       | 2350.00 | 950.00 | 394.00 | 168.00        | 27.00         | 131.00 | 168.00 | 131.00 | 270.00        |
| 3-6 months prior to care         | 4434.00       | 2350.00 | 950.00 | 394.00 | 168.00        | 27.00         | 131.00 | 168.00 | 131.00 | 270.00        |
| 0-3 months prior to care         | 4434.00       | 2350.00 | 950.00 | 394.00 | 168.00        | 27.00         | 131.00 | 168.00 | 131.00 | 270.00        |
| 0-3 months after start of care   | 4431.90       | 2349.18 | 947.82 | 392.48 | 166.52        | 27.00         | 131.00 | 168.00 | 131.00 | 269.13        |
| 3-6 months after start of care   | 4395.10       | 2296.15 | 904.24 | 372.69 | 148.11        | 27.00         | 129.03 | 164.30 | 128.53 | 258.74        |
| 6-9 months after start of care   | 4326.86       | 2194.20 | 840.67 | 339.73 | 126.19        | 25.25         | 126.57 | 153.66 | 120.56 | 241.05        |
| 9-12 months after start of care  | 4258.09       | 2098.47 | 789.34 | 314.46 | 109.51        | 25.00         | 121.76 | 144.68 | 111.07 | 225.35        |
| 12-15 months after start of care | 4195.48       | 2026.30 | 746.90 | 290.91 | 101.01        | 24.02         | 113.95 | 138.47 | 104.25 | 208.58        |
| 15-18 months after start of care | 4140.58       | 1956.81 | 707.98 | 272.86 | 89.58         | 23.01         | 111.29 | 132.64 | 98.15  | 193.18        |
| 18-21 months after start of care | 4974.58       | 1782.96 | 677.54 | 262.42 | 78.79         | 23.00         | 108.47 | 126.87 | 92.65  | 178.90        |
| 21-24 months after start of care | 4016.97       | 1836.22 | 649.92 | 249.55 | 72.54         | 23.00         | 104.42 | 120.42 | 86.44  | 167.23        |
| <b>MSP Units</b>                 |               |         |        |        |               |               |        |        |        |               |
| 9 to 12 months prior to care     | 7.49          | 8.58    | 8.11   | 7.13   | 9.41          | 8.78          | 8.40   | 8.09   | 7.95   | 13.33         |
| 6-9 months prior to care         | 8.03          | 8.59    | 8.73   | 10.25  | 10.41         | 10.52         | 11.32  | 11.99  | 13.62  | 20.48         |
| 3-6 months prior to care         | 9.31          | 10.67   | 11.77  | 12.64  | 18.52         | 13.93         | 17.92  | 16.41  | 17.47  | 30.26         |
| 0-3 months prior to care         | 17.40         | 23.04   | 25.83  | 23.41  | 30.60         | 20.56         | 17.15  | 20.90  | 22.55  | 24.17         |
| 0-3 months after start of care   | 12.43         | 15.43   | 17.10  | 17.95  | 20.47         | 12.67         | 14.91  | 15.05  | 14.73  | 10.04         |
| 3-6 months after start of care   | 11.43         | 14.19   | 15.21  | 13.86  | 15.78         | 12.07         | 12.97  | 12.42  | 12.29  | 7.39          |
| 6-9 months after start of care   | 10.65         | 12.45   | 12.44  | 12.45  | 14.60         | 8.95          | 11.35  | 10.76  | 12.68  | 7.16          |
| 9-12 months after start of care  | 10.78         | 11.73   | 11.88  | 12.43  | 14.25         | 9.12          | 9.76   | 9.66   | 10.10  | 8.54          |
| 12-15 months after start of care | 10.83         | 11.43   | 10.76  | 10.60  | 12.70         | 10.45         | 7.78   | 10.64  | 9.23   | 7.69          |
| 15-18 months after start of care | 10.65         | 11.00   | 11.23  | 10.34  | 12.80         | 11.95         | 8.55   | 10.00  | 7.75   | 7.43          |
| 18-21 months after start of care | 10.28         | 10.54   | 10.23  | 9.79   | 13.02         | 11.70         | 7.94   | 8.17   | 8.56   | 7.23          |
| 21-24 months after start of care | 10.64         | 9.90    | 10.28  | 10.64  | 10.26         | 9.91          | 9.18   | 8.08   | 8.71   | 6.33          |



Table: 6-6

Comparison of Costs for MSP, Pharmacare and Hospitals for the Year Prior to First Care and the Two Years After, 1990/91 Cohort, in 1991/92 Dollars

|                                  | Community     |         |         | Facility |               |         |          |          |               |          |
|----------------------------------|---------------|---------|---------|----------|---------------|---------|----------|----------|---------------|----------|
|                                  | Personal Care | IC1     | IC2     | IC3      | Extended Care | IC1     | IC2      | IC3      | Extended Care |          |
| <b>All Costs (\$)</b>            |               |         |         |          |               |         |          |          |               |          |
| 9 to 12 months prior to care     | 470.79        | 693.52  | 768.59  | 651.50   | 973.41        | 737.81  | 1541.06  | 1578.31  | 1923.46       | 4607.55  |
| 6-9 months prior to care         | 532.76        | 832.04  | 987.86  | 1466.31  | 1701.67       | 1360.29 | 2857.44  | 4500.11  | 4511.00       | 10377.09 |
| 3-6 months prior to care         | 706.35        | 1212.76 | 1702.50 | 2396.34  | 4825.42       | 2816.06 | 7189.09  | 8887.63  | 10356.23      | 20483.84 |
| 0-3 months prior to care         | 2142.33       | 4377.28 | 6531.91 | 5775.57  | 10672.84      | 6306.73 | 11897.35 | 15222.28 | 18493.03      | 28102.78 |
| 0-3 months after start of care   | 1126.29       | 2141.00 | 3173.43 | 3813.70  | 5119.75       | 1785.29 | 1467.47  | 2149.81  | 1951.31       | 628.30   |
| 3-6 months after start of care   | 1161.17       | 2543.56 | 3204.25 | 3568.50  | 4115.78       | 696.38  | 1895.89  | 2006.44  | 2177.80       | 430.12   |
| 6-9 months after start of care   | 1104.59       | 2124.33 | 2769.72 | 2939.52  | 3298.45       | 610.40  | 2566.44  | 1843.25  | 1894.06       | 496.18   |
| 9-12 months after start of care  | 1138.26       | 1826.53 | 2391.19 | 2440.18  | 4016.57       | 355.63  | 1132.19  | 1530.79  | 1897.51       | 621.38   |
| 12-15 months after start of care | 1102.79       | 1954.75 | 1672.17 | 1766.78  | 4034.64       | 622.25  | 1215.64  | 1660.24  | 1642.08       | 743.71   |
| 15-18 months after start of care | 1162.93       | 1795.90 | 1802.78 | 1583.72  | 3325.89       | 811.67  | 976.82   | 1639.93  | 1015.99       | 417.04   |
| 18-21 months after start of care | 1147.28       | 1559.51 | 1793.83 | 1776.29  | 3056.26       | 886.42  | 893.37   | 1082.94  | 1055.33       | 388.07   |
| 21-24 months after start of care | 1187.13       | 1575.00 | 1771.13 | 2250.67  | 2759.24       | 666.30  | 1483.32  | 640.44   | 176.68        | 459.08   |
| <b>MSP (\$)</b>                  |               |         |         |          |               |         |          |          |               |          |
| 9 to 12 months prior to care     | 182.69        | 209.48  | 190.93  | 171.51   | 217.39        | 202.99  | 189.64   | 176.76   | 176.76        | 309.98   |
| 6-9 months prior to care         | 195.83        | 209.71  | 205.63  | 246.63   | 240.49        | 243.24  | 255.67   | 262.09   | 302.63        | 476.16   |
| 3-6 months prior to care         | 227.18        | 260.61  | 277.02  | 304.29   | 427.76        | 322.04  | 404.80   | 358.60   | 388.13        | 703.48   |
| 0-3 months prior to care         | 424.50        | 562.70  | 608.04  | 563.32   | 706.75        | 475.35  | 387.39   | 456.80   | 501.11        | 561.92   |
| 0-3 months after start of care   | 303.05        | 376.79  | 402.54  | 432.07   | 472.77        | 292.92  | 336.70   | 328.81   | 327.40        | 233.41   |
| 3-6 months after start of care   | 278.77        | 346.51  | 358.05  | 333.63   | 364.49        | 279.21  | 292.83   | 271.32   | 273.18        | 171.80   |
| 6-9 months after start of care   | 259.76        | 304.07  | 292.86  | 299.49   | 337.20        | 206.96  | 256.41   | 235.07   | 281.83        | 166.56   |
| 9-12 months after start of care  | 263.07        | 286.45  | 279.69  | 299.06   | 329.29        | 210.90  | 220.36   | 211.14   | 224.49        | 198.59   |
| 12-15 months after start of care | 264.29        | 279.27  | 253.38  | 255.11   | 293.41        | 241.63  | 175.81   | 232.44   | 205.06        | 178.89   |
| 15-18 months after start of care | 259.79        | 268.61  | 264.48  | 248.88   | 295.77        | 276.36  | 193.20   | 218.45   | 172.29        | 172.70   |
| 18-21 months after start of care | 250.92        | 257.50  | 240.75  | 235.68   | 300.80        | 270.46  | 179.27   | 178.61   | 190.21        | 168.16   |
| 21-24 months after start of care | 259.67        | 241.82  | 242.00  | 256.12   | 236.93        | 229.24  | 207.43   | 176.56   | 193.59        | 147.22   |

Table: 6-6 (Continued)

|                                  | Community     |         |         | Facility |               |         |          |          |               |
|----------------------------------|---------------|---------|---------|----------|---------------|---------|----------|----------|---------------|
|                                  | Personal Care | IC1     | IC2     | IC3      | Extended Care | IC1     | IC2      | IC3      | Extended Care |
| Pharmicare (\$)                  |               |         |         |          |               |         |          |          |               |
| 9 to 12 months prior to care     | 109.72        | 109.13  | 92.26   | 83.04    | 118.52        | 31.12   | 47.21    | 40.54    | 50.72         |
| 6-9 months prior to care         | 115.32        | 113.96  | 99.55   | 83.83    | 120.41        | 46.68   | 58.25    | 41.16    | 47.23         |
| 3-6 months prior to care         | 123.09        | 123.31  | 106.19  | 87.87    | 140.07        | 54.21   | 58.91    | 41.69    | 27.32         |
| 0-3 months prior to care         | 146.37        | 150.72  | 130.46  | 120.88   | 178.45        | 70.27   | 54.43    | 39.75    | 11.88         |
| 0-3 months after start of care   | 161.08        | 173.79  | 168.86  | 155.82   | 239.16        | 170.15  | 176.95   | 189.30   | 50.64         |
| 3-6 months after start of care   | 160.06        | 168.82  | 172.33  | 154.78   | 210.34        | 149.57  | 166.99   | 159.78   | 31.64         |
| 6-9 months after start of care   | 158.64        | 169.22  | 175.60  | 155.52   | 202.85        | 134.16  | 157.69   | 147.81   | 28.13         |
| 9-12 months after start of care  | 163.04        | 173.42  | 186.10  | 162.50   | 194.30        | 144.73  | 164.86   | 150.53   | 28.62         |
| 12-15 months after start of care | 165.57        | 169.74  | 187.44  | 164.70   | 181.72        | 150.63  | 159.58   | 154.07   | 28.94         |
| 15-18 months after start of care | 167.91        | 175.49  | 191.22  | 157.30   | 197.81        | 128.98  | 153.48   | 142.99   | 33.13         |
| 18-21 months after start of care | 167.18        | 171.71  | 188.14  | 162.38   | 198.71        | 135.52  | 145.98   | 143.89   | 29.86         |
| 21-24 months after start of care | 174.15        | 181.47  | 199.71  | 170.56   | 190.44        | 141.41  | 144.38   | 149.76   | 37.38         |
| Hospital (Excl. EC)              | 178.38        | 374.90  | 485.39  | 396.95   | 637.50        | 503.70  | 1304.20  | 1361.01  | 4246.85       |
| 9 to 12 months prior to care     | 221.61        | 508.37  | 682.68  | 1135.85  | 1340.77       | 1070.37 | 2543.51  | 4196.88  | 9853.70       |
| 6-9 months prior to care         | 356.08        | 828.84  | 1319.29 | 2004.19  | 4257.59       | 2439.81 | 6725.38  | 8487.34  | 19753.05      |
| 3-6 months prior to care         | 1571.46       | 3663.86 | 5793.42 | 5091.37  | 9787.65       | 5761.11 | 11455.53 | 14725.74 | 27528.97      |
| 0-3 months after start of care   | 662.16        | 1590.42 | 2602.04 | 3225.80  | 4407.82       | 1322.22 | 953.82   | 1631.70  | 344.25        |
| 3-6 months after start of care   | 722.34        | 2028.24 | 2673.87 | 3080.09  | 3540.95       | 267.59  | 1436.07  | 1575.35  | 226.68        |
| 6-9 months after start of care   | 686.19        | 1651.04 | 2301.26 | 2484.51  | 2758.41       | 269.28  | 2152.34  | 1460.37  | 301.49        |
| 9-12 months after start of care  | 712.14        | 1366.66 | 1925.40 | 1978.62  | 3492.97       | 0.00    | 746.97   | 1169.12  | 394.16        |
| 12-15 months after start of care | 672.93        | 1505.74 | 1231.35 | 1346.97  | 3559.51       | 230.00  | 880.25   | 1273.72  | 535.88        |
| 15-18 months after start of care | 735.23        | 1351.79 | 1347.08 | 1177.54  | 2832.31       | 406.33  | 630.13   | 1278.49  | 211.21        |
| 18-21 months after start of care | 729.18        | 1130.30 | 1364.94 | 1378.24  | 2556.76       | 480.43  | 568.12   | 760.44   | 190.05        |
| 21-24 months after start of care | 753.30        | 1151.71 | 1329.43 | 1823.99  | 2331.87       | 295.65  | 1131.51  | 314.12   | 274.47        |



Tables 6-7 to 6-10 are presented for two reasons. The first is to indicate how misleading an analysis can be if it does not standardize for the level of care. For example, the overall number of hospital days in period 1 (the first six months after the start of care) was 6.04. However average hospital days ranged from 2.89 for personal care clients to 23.08 days for extended care clients who live in the community. Simply comparing the costs of care for clients in the community versus those in facilities will lead one to over-estimate the potential savings from providing care in the community. As will be seen later, home care costs, by level of care, are about one half to three quarters of facility care costs. Without standardizing for the level of care, it appears that they are about 30 percent of facility costs (\$8,857 versus \$29,616, Table 6-8).

Tables 6-9<sup>46</sup> and 6-10 are presented to demonstrate the pattern noted earlier that service utilization, and costs, may decrease for individuals who remain in care over time. However, this is not a consistent pattern across all types of service or all cohorts. The utilization and costs for MSP and hospitals tend to decrease over time for community clients while, aside from the first six months of care, the utilization of most other services is fairly consistent. While for the 1990/91 cohort, MSP and hospital costs tended to decrease over time, for the 1987/88 and 1993/94 cohorts there appeared to be a modest increase in resource use in the last period (that is, 18-24 months after the start of care).

Tables 6-11 and 6-12 present utilization and cost data, by level of care, for FTE clients for each of the three cohorts. Table 6-11 shows that there appears to be a pattern of increasing service utilization across cohorts for MSP services and a decreasing pattern of hospital utilization, for both community and facility clients. This may well be reflective of restraint in the hospital sector in the 1990s. The low level of acute care utilization by EC clients is likely due to the fact that they are already in a hospital. They would only be counted as having acute care days if they had an internal transfer from an EC ward in an acute care hospital to the acute portion of the hospital and if that transfer was recorded on their hospital abstract. This differential in utilization is worthy of investigation in the future. There was also a pattern of increasing cost and resource use over time for homemaker and adult day care clients for the higher levels of care.

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<sup>46</sup>It should be noted that the number of facility days is generally less than 182 days in Table 6-9. This is because facility days are a sub-set of total days because the hospital portion for clients who had an end service care advice but started care in a hospital the next day is included in the total count of days. The same logic, but on an annual basis, also applies to Tables 6-11, 6-13 and 6-18.

Table: 6-7

Comparative Analysis of Average Service Utilization for Community Care and Facility Care Clients by Six Month Periods: 1990/91 Cohort

|                                    | <u>GROUP</u>     |         |         |         |        |                 |         |         |           |          | Overall One Year<br>Average for In Care<br>Group |
|------------------------------------|------------------|---------|---------|---------|--------|-----------------|---------|---------|-----------|----------|--|
|                                    | <u>Community</u> |         |         |         |        | <u>Facility</u> |         |         |           |          |  |
|                                    | 1                | 2       | 3       | 4       | 1      | 2               | 3       | 4       | Community | Facility |  |
| <u>FTE Clients</u>                 | 7788.61          | 6613.06 | 5765.41 | 5159.20 | 849.00 | 1098.40         | 1253.59 | 1346.96 | 6331.57   | 1136.99  |  |
| <u>MSP Units</u>                   | 26.53            | 22.25   | 21.81   | 20.60   | 23.86  | 20.42           | 18.95   | 18.65   | 46.26     | 40.27    |  |
| <u>Pharmacy<br/>Prescriptions</u>  | 10.73            | 10.33   | 10.42   | 10.39   | 18.19  | 17.52           | 17.68   | 17.86   | 20.97     | 35.58    |  |
| <u>Hospital Days<br/>(Excl EC)</u> | 6.04             | 4.88    | 4.53    | 3.93    | 2.54   | 2.34            | 2.09    | 2.26    | 9.93      | 4.57     |  |
| <u>Direct Care Visits</u>          | 4.30             | 2.24    | 1.84    | 1.88    | 0.43   | 0.20            | 0.17    | 0.14    | 5.42      | 0.43     |  |
| <u>Homemaker Hours</u>             | 67.01            | 65.41   | 65.04   | 64.98   | 0.00   | 0.00            | 0.00    | 0.00    | 131.46    | 0.00     |  |
| <u>Adult Day Care<br/>Days</u>     | 2.28             | 2.70    | 2.67    | 2.48    | 0.00   | 0.00            | 0.00    | 0.00    | 5.04      | 0.00     |  |
| <u>All LTC Facility<br/>Days</u>   | 0.00             | 0.00    | 0.00    | 0.00    | 180.90 | 181.03          | 181.22  | 181.25  | 0.00      | 362.25   |  |

Note: Period 1 is 0-6 months after first care, period 2 is 6-12 months after first care, period 3 is 12-18 months after first care and period 4 is 18-24 months after first care.



Table: 6-8

Comparative Average Annual Costs for Clients Receiving Community and Facility Care by Six Month Periods:  
1990/91 Cohort, in 1991/92 Dollars

|                         | <u>GROUP</u>     |         |         |         |                 |          |          |          | Overall One Year<br>Average for In Care<br>Group |          |
|-------------------------|------------------|---------|---------|---------|-----------------|----------|----------|----------|--|----------|
|                         | <u>Community</u> |         |         |         | <u>Facility</u> |          |          |          |  |          |
|                         | 1                | 2       | 3       | 4       | 1               | 2        | 3        | 4        |  |          |
| FTE Clients             | 7788.61          | 6613.06 | 5765.41 | 5159.20 | 849.00          | 1098.40  | 1253.59  | 1346.96  | 6331.57  | 1136.99  |
| All Costs (\$)          | 5072.98          | 4343.52 | 4160.86 | 3865.23 | 15099.01        | 14763.76 | 14668.45 | 14791.43 | 8857.68  | 29616.53 |
| MSP (\$)                | 645.23           | 541.39  | 530.82  | 501.64  | 538.34          | 461.19   | 428.02   | 421.29   | 1125.64  | 909.27   |
| Pharmcare (\$)          | 346.20           | 334.24  | 337.67  | 336.92  | 254.39          | 244.58   | 246.60   | 249.67   | 678.49   | 496.95   |
| Hospital (Excl EC) (\$) | 2568.08          | 2072.15 | 1926.63 | 1669.87 | 1081.27         | 993.24   | 889.60   | 961.40   | 4219.17  | 1943.36  |
| Direct Care (\$)        | 236.63           | 123.21  | 101.20  | 103.54  | 0.00            | 0.00     | 0.00     | 0.00     | 298.14   | 0.00     |
| Homemakers (\$)         | 1151.25          | 1123.74 | 1117.37 | 1116.41 | 0.00            | 0.00     | 0.00     | 0.00     | 2258.51  | 0.00     |
| Adult Day Care (\$)     | 125.60           | 148.79  | 147.18  | 136.85  | 0.00            | 0.00     | 0.00     | 0.00     | 277.72   | 0.00     |
| All LTC Facility (\$)   | 0.00             | 0.00    | 0.00    | 0.00    | 13225.00        | 13064.74 | 13104.22 | 13159.06 | 0.00   | 26266.95 |

Note: Period 1 is 0-6 months after first care; period 2 is 6-12 months after first care; period 3 is 12-18 months after first care and period 4 is 18-24 months after first care.

Table: 6-9

Comparative Analysis of Average Annual Service Utilization for Community and Facility Care Clients, by Level of Care, by Six Month Periods: 1990/91 Cohort

|                                |               | GROUP            |         |         |         |                 |        |        |        |
|--------------------------------|---------------|------------------|---------|---------|---------|-----------------|--------|--------|--------|
|                                |               | Community PERIOD |         |         |         | Facility PERIOD |        |        |        |
|                                |               | 1                | 2       | 3       | 4       | 1               | 2      | 3      | 4      |
| <u>FTE Clients</u>             | Personal Care | 4277.07          | 3783.55 | 3353.17 | 3024.38 | 29.54           | 31.72  | 32.82  | 27.99  |
|                                | IC1           | 2168.08          | 1792.72 | 1557.16 | 1391.81 | 139.49          | 158.38 | 167.34 | 174.24 |
|                                | IC2           | 888.31           | 712.27  | 614.71  | 543.61  | 211.88          | 299.12 | 331.16 | 361.49 |
|                                | IC3           | 307.10           | 227.23  | 171.12  | 134.63  | 177.10          | 269.40 | 346.57 | 379.36 |
|                                | Extended Care | 148.04           | 97.28   | 69.25   | 64.77   | 290.98          | 339.77 | 375.70 | 403.88 |
| <u>MSP Units</u>               | Personal Care | 23.43            | 20.78   | 20.94   | 19.94   | 22.78           | 17.75  | 19.53  | 17.69  |
|                                | IC1           | 28.95            | 23.40   | 22.59   | 21.36   | 27.56           | 21.42  | 21.38  | 20.60  |
|                                | IC2           | 31.02            | 25.04   | 23.39   | 21.01   | 27.09           | 21.66  | 19.90  | 21.44  |
|                                | IC3           | 33.28            | 24.73   | 22.55   | 21.33   | 26.46           | 24.43  | 20.26  | 19.54  |
|                                | Extended Care | 39.68            | 31.88   | 30.02   | 30.45   | 18.25           | 15.93  | 15.77  | 14.55  |
| <u>Pharmacy Prescriptions</u>  | Personal Care | 9.70             | 9.56    | 9.81    | 9.79    | 20.45           | 20.78  | 20.66  | 20.79  |
|                                | IC1           | 11.73            | 11.19   | 11.05   | 10.91   | 25.25           | 25.22  | 26.53  | 25.67  |
|                                | IC2           | 12.11            | 11.68   | 11.53   | 11.66   | 25.65           | 23.53  | 23.99  | 24.34  |
|                                | IC3           | 12.21            | 10.87   | 11.87   | 11.18   | 23.61           | 21.72  | 21.04  | 20.02  |
|                                | Extended Care | 14.39            | 13.37   | 12.52   | 15.18   | 5.86            | 5.01   | 4.80   | 6.46   |
| <u>Hospital Days (Excl EC)</u> | Personal Care | 2.89             | 2.47    | 2.58    | 2.17    | 1.05            | 1.10   | 1.25   | 1.21   |
|                                | IC1           | 7.34             | 5.70    | 5.75    | 4.84    | 3.89            | 2.85   | 2.84   | 2.61   |
|                                | IC2           | 11.76            | 10.24   | 8.34    | 8.43    | 3.60            | 2.68   | 2.13   | 3.52   |
|                                | IC3           | 16.05            | 15.02   | 9.30    | 8.19    | 2.91            | 3.41   | 2.86   | 2.58   |
|                                | Extended Care | 23.08            | 20.18   | 26.28   | 19.92   | 1.06            | 1.05   | 1.09   | 0.77   |
| <u>Direct Care Visits</u>      | Personal Care | 1.98             | 0.91    | 0.72    | 0.97    | 0.00            | 0.00   | 0.00   | 0.00   |
|                                | IC1           | 5.67             | 3.28    | 2.68    | 2.16    | 0.00            | 0.00   | 0.00   | 0.00   |
|                                | IC2           | 6.73             | 4.24    | 4.21    | 4.27    | 0.00            | 0.00   | 0.00   | 0.00   |
|                                | IC3           | 11.88            | 5.51    | 4.69    | 5.93    | 0.00            | 0.00   | 0.00   | 0.00   |
|                                | Extended Care | 21.13            | 12.72   | 9.07    | 10.02   | 0.00            | 0.00   | 0.00   | 0.00   |
| <u>Homemaker Hours</u>         | Personal Care | 38.28            | 39.16   | 40.22   | 40.65   | 0.00            | 0.00   | 0.00   | 0.00   |
|                                | IC1           | 67.26            | 69.47   | 70.77   | 69.95   | 0.00            | 0.00   | 0.00   | 0.00   |
|                                | IC2           | 119.01           | 122.47  | 130.74  | 124.79  | 0.00            | 0.00   | 0.00   | 0.00   |
|                                | IC3           | 200.99           | 193.98  | 193.41  | 205.33  | 0.00            | 0.00   | 0.00   | 0.00   |
|                                | Extended Care | 303.39           | 293.47  | 237.71  | 300.72  | 0.00            | 0.00   | 0.00   | 0.00   |
| <u>Adult Day Care Days</u>     | Personal Care | 0.53             | 0.57    | 0.55    | 0.58    | 0.00            | 0.00   | 0.00   | 0.00   |
|                                | IC1           | 3.19             | 3.84    | 4.02    | 3.71    | 0.00            | 0.00   | 0.00   | 0.00   |
|                                | IC2           | 6.92             | 8.67    | 7.91    | 7.58    | 0.00            | 0.00   | 0.00   | 0.00   |
|                                | IC3           | 6.70             | 9.66    | 10.97   | 10.43   | 0.00            | 0.00   | 0.00   | 0.00   |
|                                | Extended Care | 2.50             | 4.62    | 7.94    | 5.99    | 0.00            | 0.00   | 0.00   | 0.00   |
| <u>All LTC Facility Days</u>   | Personal Care | 0.00             | 0.00    | 0.00    | 0.00    | 181.39          | 182.00 | 181.94 | 181.75 |
|                                | IC1           | 0.00             | 0.00    | 0.00    | 0.00    | 181.46          | 181.52 | 181.53 | 181.44 |
|                                | IC2           | 0.00             | 0.00    | 0.00    | 0.00    | 180.52          | 181.05 | 181.45 | 181.07 |
|                                | IC3           | 0.00             | 0.00    | 0.00    | 0.00    | 179.72          | 180.24 | 180.37 | 180.70 |
|                                | Extended Care | 0.00             | 0.00    | 0.00    | 0.00    | 181.57          | 181.33 | 181.61 | 181.80 |

Note: Period 1 is 0-6 months after first care, period 2 is 6-12 months after first care, period 3 is 12-18 months after first care and period 4 is 18-24 months after first care.



Table: 6-10

Comparative Average Costs for Clients Receiving Community and Facility Care, by Level of Care, by Six Month Periods: 1990/91 Cohort, in 1991/92 Dollars

|                          |               | GROUP            |          |          |          |                 |          |          |          |
|--------------------------|---------------|------------------|----------|----------|----------|-----------------|----------|----------|----------|
|                          |               | Community PERIOD |          |          |          | Facility PERIOD |          |          |          |
|                          |               | 1                | 2        | 3        | 4        | 1               | 2        | 3        | 4        |
| FTE                      | Personal Care | 4277.07          | 3783.55  | 3353.17  | 3024.38  | 29.54           | 31.72    | 32.82    | 27.99    |
| Clients                  | IC1           | 2168.08          | 1792.72  | 1557.16  | 1391.81  | 139.49          | 158.38   | 167.34   | 174.24   |
|                          | IC2           | 888.31           | 712.27   | 614.71   | 543.61   | 211.88          | 299.12   | 331.16   | 361.49   |
|                          | IC3           | 307.10           | 227.23   | 171.12   | 134.63   | 177.10          | 269.40   | 346.57   | 379.36   |
|                          | Extended Care | 148.04           | 97.28    | 69.25    | 64.77    | 290.98          | 339.77   | 375.70   | 403.88   |
| All Costs (\$)           | Personal Care | 2916.96          | 2630.01  | 2694.73  | 2518.00  | 6274.07         | 6197.56  | 6298.83  | 6236.67  |
|                          | IC1           | 5844.09          | 4934.54  | 4929.41  | 4448.69  | 10567.81        | 9997.76  | 10011.84 | 9877.34  |
|                          | IC2           | 8914.82          | 8129.17  | 7377.37  | 7246.31  | 12181.48        | 11667.47 | 11419.19 | 12030.48 |
|                          | IC3           | 12450.11         | 11463.88 | 9027.49  | 8748.84  | 14593.79        | 14773.41 | 14444.01 | 14314.48 |
| MSP (\$)                 | Extended Care | 17713.75         | 15746.05 | 17292.67 | 15707.38 | 20599.09        | 20503.27 | 20544.89 | 20423.50 |
|                          | Personal Care | 570.36           | 505.89   | 509.94   | 485.46   | 545.20          | 424.73   | 467.30   | 423.20   |
|                          | IC1           | 712.00           | 575.66   | 555.58   | 525.41   | 601.91          | 467.80   | 466.78   | 449.92   |
|                          | IC2           | 742.33           | 599.10   | 559.77   | 502.77   | 615.58          | 492.28   | 452.34   | 487.31   |
| Pharma-care (\$)         | IC3           | 789.83           | 586.95   | 535.28   | 506.19   | 598.34          | 552.30   | 458.15   | 441.86   |
|                          | Extended Care | 947.86           | 761.38   | 717.04   | 727.22   | 414.42          | 361.92   | 358.09   | 330.40   |
|                          | Personal Care | 324.36           | 319.49   | 327.96   | 327.35   | 260.14          | 264.31   | 262.78   | 264.54   |
|                          | IC1           | 367.62           | 350.86   | 346.34   | 341.94   | 357.78          | 357.43   | 375.90   | 363.77   |
| Hospital (Excl. EC) (\$) | IC2           | 376.95           | 363.55   | 358.93   | 362.77   | 359.70          | 329.96   | 336.49   | 341.31   |
|                          | IC3           | 363.08           | 323.21   | 352.91   | 332.41   | 322.67          | 296.85   | 287.58   | 273.61   |
|                          | Extended Care | 444.15           | 412.65   | 386.29   | 468.29   | 85.99           | 73.51    | 70.55    | 94.90    |
|                          | Personal Care | 1226.88          | 1050.72  | 1095.72  | 921.56   | 446.03          | 468.95   | 530.86   | 516.27   |
| Direct Care (\$)         | IC1           | 3120.93          | 2422.85  | 2443.01  | 2056.59  | 1651.32         | 1212.87  | 1208.91  | 1107.37  |
|                          | IC2           | 4999.16          | 4350.99  | 3545.42  | 3584.60  | 1530.43         | 1140.93  | 904.78   | 1496.63  |
|                          | IC3           | 6821.21          | 6385.36  | 3953.93  | 3482.04  | 1235.85         | 1451.37  | 1216.49  | 1094.55  |
|                          | Extended Care | 9809.41          | 8575.99  | 11169.23 | 8464.66  | 451.32          | 446.55   | 463.80   | 325.16   |
| Home-makers (\$)         | Personal Care | 108.74           | 49.81    | 39.66    | 53.46    | 0.00            | 0.00     | 0.00     | 0.00     |
|                          | IC1           | 311.93           | 180.24   | 147.42   | 118.73   | 0.00            | 0.00     | 0.00     | 0.00     |
|                          | IC2           | 370.23           | 233.41   | 231.28   | 234.81   | 0.00            | 0.00     | 0.00     | 0.00     |
|                          | IC3           | 653.64           | 303.22   | 258.20   | 326.00   | 0.00            | 0.00     | 0.00     | 0.00     |
| Adult Day Care (\$)      | Extended Care | 1162.07          | 699.65   | 498.80   | 550.89   | 0.00            | 0.00     | 0.00     | 0.00     |
|                          | Personal Care | 657.67           | 672.76   | 690.93   | 698.39   | 0.00            | 0.00     | 0.00     | 0.00     |
|                          | IC1           | 1155.55          | 1193.44  | 1215.78  | 1201.77  | 0.00            | 0.00     | 0.00     | 0.00     |
|                          | IC2           | 2044.66          | 2104.06  | 2246.13  | 2143.86  | 0.00            | 0.00     | 0.00     | 0.00     |
| All LTC Facility (\$)    | IC3           | 3453.09          | 3332.58  | 3322.79  | 3527.52  | 0.00            | 0.00     | 0.00     | 0.00     |
|                          | Extended      | 5212.25          | 5041.77  | 4083.80  | 5166.41  | 0.00            | 0.00     | 0.00     | 0.00     |
|                          | Personal Care | 28.95            | 31.33    | 30.53    | 31.77    | 0.00            | 0.00     | 0.00     | 0.00     |
|                          | IC1           | 176.06           | 211.50   | 221.28   | 204.24   | 0.00            | 0.00     | 0.00     | 0.00     |
| All LTC Facility (\$)    | IC2           | 381.48           | 478.05   | 435.83   | 417.50   | 0.00            | 0.00     | 0.00     | 0.00     |
|                          | IC3           | 369.25           | 532.56   | 604.37   | 574.69   | 0.00            | 0.00     | 0.00     | 0.00     |
|                          | Extended Care | 138.01           | 254.59   | 437.50   | 329.90   | 0.00            | 0.00     | 0.00     | 0.00     |
|                          | Personal Care | 0.00             | 0.00     | 0.00     | 0.00     | 5022.70         | 5039.58  | 5037.89  | 5032.65  |
| All LTC Facility (\$)    | IC1           | 0.00             | 0.00     | 0.00     | 0.00     | 7956.81         | 7959.66  | 7960.26  | 7956.29  |
|                          | IC2           | 0.00             | 0.00     | 0.00     | 0.00     | 9675.77         | 9704.30  | 9725.58  | 9705.23  |
|                          | IC3           | 0.00             | 0.00     | 0.00     | 0.00     | 12436.93        | 12472.90 | 12481.70 | 12504.47 |
|                          | Extended Care | 0.00             | 0.00     | 0.00     | 0.00     | 19647.36        | 19621.28 | 19652.45 | 19673.00 |

Note: Period 1 is 0-6 months after first care, period 2 is 6-12 months after first care, period 3 is 12-18 months after first care and period 4 is 18-24 months after first care.

Table: 6-11

Comparison of Average Annual Service Utilization, by Level of Care:  
1987/88, 1990/91 and 1993/94 Cohorts

|                                 |               | TYPE                         |          |                              |          |                              |          |
|---------------------------------|---------------|------------------------------|----------|------------------------------|----------|------------------------------|----------|
|                                 |               | Overall Average for One Year |          | Overall Average for One Year |          | Overall Average for One Year |          |
|                                 |               | 1987/88 Fiscal Year          |          | 1990/91 Fiscal Year          |          | 1993/94 Fiscal Year          |          |
|                                 |               | Community                    | Facility | Community                    | Facility | Community                    | Facility |
| <u>FTE Clients</u>              | Personal Care | 3004.34                      | 98.12    | 3609.54                      | 30.52    | 2814.30                      | 3.60     |
|                                 | IC1           | 1381.67                      | 273.14   | 1727.44                      | 159.87   | 1920.02                      | 85.09    |
|                                 | IC2           | 499.28                       | 278.15   | 689.73                       | 300.91   | 966.27                       | 430.16   |
|                                 | IC3           | 131.27                       | 250.73   | 210.02                       | 293.11   | 290.61                       | 376.87   |
|                                 | Extended Care | 101.15                       | 362.31   | 94.84                        | 352.58   | 127.29                       | 469.39   |
| <u>MSP Units</u>                | Personal Care | 40.03                        | 33.48    | 42.85                        | 38.86    | 47.31                        | 35.12    |
|                                 | IC1           | 47.34                        | 40.63    | 49.10                        | 45.05    | 53.56                        | 46.16    |
|                                 | IC2           | 49.58                        | 44.73    | 51.61                        | 44.13    | 53.73                        | 45.02    |
|                                 | IC3           | 50.03                        | 40.33    | 53.73                        | 43.85    | 55.34                        | 44.30    |
|                                 | Extended Care | 60.49                        | 34.96    | 68.68                        | 31.94    | 69.09                        | 32.27    |
| <u>Pharmacy Prescriptions</u>   | Personal Care | 17.11                        | 36.90    | 19.42                        | 41.34    | 17.80                        | 21.80    |
|                                 | IC1           | 20.80                        | 39.84    | 22.54                        | 51.38    | 21.40                        | 45.68    |
|                                 | IC2           | 20.09                        | 39.69    | 23.57                        | 48.54    | 22.44                        | 49.85    |
|                                 | IC3           | 17.19                        | 35.10    | 23.23                        | 42.51    | 21.75                        | 43.29    |
|                                 | Extended Care | 22.56                        | 10.55    | 27.85                        | 11.09    | 24.81                        | 11.98    |
| <u>Hospital Days (Excl. EC)</u> | Personal Care | 5.89                         | 4.36     | 5.11                         | 2.31     | 4.63                         | 2.22     |
|                                 | IC1           | 13.11                        | 7.14     | 12.11                        | 6.02     | 9.37                         | 6.09     |
|                                 | IC2           | 22.63                        | 7.48     | 19.90                        | 5.89     | 15.98                        | 4.77     |
|                                 | IC3           | 27.76                        | 7.48     | 26.28                        | 5.81     | 24.25                        | 4.07     |
|                                 | Extended Care | 40.83                        | 2.99     | 44.76                        | 1.96     | 31.57                        | 2.00     |
| <u>Direct Care Visits</u>       | Personal Care | 2.75                         | 0.00     | 2.39                         | 0.00     | 2.08                         | 0.00     |
|                                 | IC1           | 7.60                         | 0.00     | 7.34                         | 0.00     | 5.27                         | 0.00     |
|                                 | IC2           | 12.20                        | 0.00     | 10.08                        | 0.00     | 9.29                         | 0.00     |
|                                 | IC3           | 13.55                        | 0.00     | 15.48                        | 0.00     | 13.94                        | 0.00     |
|                                 | Extended Care | 26.92                        | 0.00     | 29.75                        | 0.00     | 30.16                        | 0.00     |
| <u>Homemaker Hours</u>          | Personal Care | 72.37                        | 0.00     | 78.91                        | 0.00     | 75.69                        | 0.00     |
|                                 | IC1           | 122.19                       | 0.00     | 138.33                       | 0.00     | 122.66                       | 0.00     |
|                                 | IC2           | 216.21                       | 0.00     | 247.31                       | 0.00     | 227.98                       | 0.00     |
|                                 | IC3           | 328.45                       | 0.00     | 396.49                       | 0.00     | 408.41                       | 0.00     |
|                                 | Extended Care | 413.04                       | 0.00     | 576.80                       | 0.00     | 604.26                       | 0.00     |
| <u>Adult Day Care Days</u>      | Personal Care | 1.15                         | 0.00     | 1.11                         | 0.00     | 1.13                         | 0.00     |
|                                 | IC1           | 7.21                         | 0.00     | 7.30                         | 0.00     | 7.16                         | 0.00     |
|                                 | IC2           | 12.09                        | 0.00     | 15.45                        | 0.00     | 17.67                        | 0.00     |
|                                 | IC3           | 15.89                        | 0.00     | 17.94                        | 0.00     | 18.92                        | 0.00     |
|                                 | Extended Care | 8.34                         | 0.00     | 9.27                         | 0.00     | 7.03                         | 0.00     |
| <u>All LTC Facility Days</u>    | Personal Care | 0.00                         | 363.47   | 0.00                         | 363.56   | 0.00                         | 363.86   |
|                                 | IC1           | 0.00                         | 362.39   | 0.00                         | 362.98   | 0.00                         | 362.72   |
|                                 | IC2           | 0.00                         | 361.17   | 0.00                         | 362.14   | 0.00                         | 362.66   |
|                                 | IC3           | 0.00                         | 361.69   | 0.00                         | 360.70   | 0.00                         | 362.29   |
|                                 | Extended Care | 0.00                         | 362.86   | 0.00                         | 363.18   | 0.00                         | 363.58   |

Table: 6-12

Comparison of Average Annual Costs, by Level of Care: 1987/88, 1990/91 and 1993/94 Cohorts, in 1991/92 Dollars

|                                |               | TOTAL               |          |                     |          |                     |          |
|--------------------------------|---------------|---------------------|----------|---------------------|----------|---------------------|----------|
|                                |               | 1987/88 Fiscal Year |          | 1990/91 Fiscal Year |          | 1993/94 Fiscal Year |          |
|                                |               | Community           | Facility | Community           | Facility | Community           | Facility |
| FTE Clients                    | Personal Care | 3004.34             | 98.12    | 3609.54             | 30.52    | 2814.30             | 3.60     |
|                                | IC1           | 1381.67             | 273.14   | 1727.44             | 159.87   | 1920.02             | 85.09    |
|                                | IC2           | 499.28              | 278.15   | 689.73              | 300.91   | 966.27              | 430.16   |
|                                | IC3           | 131.27              | 250.73   | 210.02              | 293.11   | 290.61              | 376.87   |
|                                | Extended Care | 101.15              | 362.31   | 94.84               | 352.58   | 127.29              | 469.39   |
| All Costs (\$)                 | Personal Care | 5505.89             | 13186.73 | 5413.16             | 12504.54 | 5190.72             | 12137.07 |
|                                | IC1           | 10303.09            | 20375.47 | 10241.82            | 20185.97 | 8762.18             | 20150.58 |
|                                | IC2           | 16481.89            | 24109.59 | 16081.34            | 23597.33 | 14176.47            | 23189.19 |
|                                | IC3           | 20759.61            | 29598.94 | 21786.06            | 29000.83 | 21091.78            | 28395.42 |
|                                | Extended Care | 28529.36            | 41483.97 | 33579.41            | 41022.56 | 28258.70            | 41102.53 |
| MSP (\$)                       | Personal Care | 974.64              | 801.12   | 1043.30             | 929.95   | 1151.85             | 840.47   |
|                                | IC1           | 1164.35             | 887.34   | 1207.58             | 983.83   | 1317.48             | 1008.05  |
|                                | IC2           | 1186.56             | 1016.62  | 1234.95             | 1003.00  | 1285.73             | 1023.16  |
|                                | IC3           | 1187.52             | 911.82   | 1275.30             | 991.38   | 1313.64             | 1001.49  |
|                                | Extended Care | 1444.88             | 794.05   | 1640.46             | 725.41   | 1650.17             | 732.94   |
| Pharma-<br>care (\$)           | Personal Care | 572.15              | 469.48   | 649.09              | 525.88   | 595.02              | 277.28   |
|                                | IC1           | 652.18              | 564.53   | 706.61              | 728.14   | 670.78              | 647.32   |
|                                | IC2           | 625.29              | 556.66   | 733.37              | 680.81   | 698.29              | 699.17   |
|                                | IC3           | 511.12              | 479.79   | 690.62              | 580.98   | 646.61              | 591.71   |
|                                | Extended Care | 695.95              | 154.91   | 859.26              | 162.85   | 765.41              | 175.91   |
| Hospital<br>(Excl. EC)<br>(\$) | Personal Care | 2501.61             | 1851.64  | 2172.60             | 981.80   | 1967.19             | 944.01   |
|                                | IC1           | 5572.00             | 3032.60  | 5145.31             | 2557.46  | 3982.68             | 2589.74  |
|                                | IC2           | 9618.47             | 3177.38  | 8458.38             | 2502.70  | 6790.59             | 2028.36  |
|                                | IC3           | 11797.64            | 3178.19  | 11168.30            | 2467.86  | 10305.97            | 1731.58  |
|                                | Extended Care | 17352.52            | 1269.80  | 19023.52            | 834.73   | 13415.73            | 850.20   |
| Direct<br>Care (\$)            | Personal Care | 151.05              | 0.00     | 131.35              | 0.00     | 114.37              | 0.00     |
|                                | IC1           | 418.18              | 0.00     | 403.55              | 0.00     | 289.61              | 0.00     |
|                                | IC2           | 670.93              | 0.00     | 554.53              | 0.00     | 511.16              | 0.00     |
|                                | IC3           | 744.98              | 0.00     | 851.60              | 0.00     | 766.67              | 0.00     |
|                                | Extended Care | 1480.39             | 0.00     | 1636.09             | 0.00     | 1658.79             | 0.00     |
| Home-<br>makers (\$)           | Personal Care | 1243.28             | 0.00     | 1355.76             | 0.00     | 1300.29             | 0.00     |
|                                | IC1           | 2099.23             | 0.00     | 2376.53             | 0.00     | 2107.22             | 0.00     |
|                                | IC2           | 3714.43             | 0.00     | 4248.87             | 0.00     | 3916.64             | 0.00     |
|                                | IC3           | 5642.82             | 0.00     | 6811.76             | 0.00     | 7016.47             | 0.00     |
|                                | Extended Care | 7096.06             | 0.00     | 9909.40             | 0.00     | 10381.18            | 0.00     |
| Adult Day<br>Care (\$)         | Personal Care | 63.16               | 0.00     | 61.06               | 0.00     | 62.00               | 0.00     |
|                                | IC1           | 397.17              | 0.00     | 402.24              | 0.00     | 394.41              | 0.00     |
|                                | IC2           | 666.22              | 0.00     | 851.23              | 0.00     | 974.06              | 0.00     |
|                                | IC3           | 875.52              | 0.00     | 988.47              | 0.00     | 1042.43             | 0.00     |
|                                | Extended Care | 459.56              | 0.00     | 510.69              | 0.00     | 387.43              | 0.00     |
| All LTC<br>Facility (\$)       | Personal Care | 0.00                | 10064.48 | 0.00                | 10066.91 | 0.00                | 10075.31 |
|                                | IC1           | 0.00                | 15891.00 | 0.00                | 15916.55 | 0.00                | 15905.48 |
|                                | IC2           | 0.00                | 19358.92 | 0.00                | 19410.83 | 0.00                | 19438.50 |
|                                | IC3           | 0.00                | 25029.13 | 0.00                | 24960.61 | 0.00                | 25070.64 |
|                                | Extended Care | 0.00                | 39265.22 | 0.00                | 39299.56 | 0.00                | 39343.40 |

Tables 6-11 to 6-17 reveal the key findings of this study in regard to whether or not home care is a cost-effective alternative to facility care, and under what conditions it is, or is not, cost-effective. Tables 6-13 to 6-17 present average annual service utilization and cost data for clients who remained in the same type and level of care for one or more six month period (0-6 months after first care, 6-12 months after first care, 12-18 months after first care and 18-24 months after first care), or who changed their type and/or level of care in one or more six month period. The key findings from Tables 6-11 to 6-17 are:

- Costs for home care clients, by level of care, are some 40 to 75 percent of the costs of facility care, with PC and IC at about 40 percent, IC2 and IC3 at about two thirds and EC at about three quarters of the costs of facility clients.
- For home care clients who remain at the same level and type of care for six months or more, the costs are about one half, or less, of the overall costs for facility clients.
- For home care clients who changed their type or level of care but did not die, costs are about 70 percent of the costs for facility clients for clients at PC and IC1 levels, about 80 to 90 percent for IC2 and IC3 clients and about 90 percent or more for EC clients.
- The costs for home care clients who die in a given six month period are higher, for all levels of care, than for facility clients who die.
- The costs for home and community based continuing care services only (that is, direct care, homemakers, adult day care and assessors), are about 20 to 30 percent of the costs of residential long term care, across levels of care.
- Hospital costs account for about 50 to 60 percent of the overall health costs for home care clients and medical services account for about 5 to 10 percent for a total of up to 70 percent, or about two thirds of health care costs for home care clients. However, this portion was somewhat less for the 1993/94 cohort.
- Hospital and medical costs accounted for approximately 15 percent or less of the costs for clients in long term care facilities while long term care facility care accounted for about 80 percent or more of the health costs for facility clients.

These findings are discussed in the next chapter and their implications for future policy and program initiatives are discussed in Chapter 8.

Table: 6-13

Comparison of Average Annual Service Utilization for Different Types of Clients,  
by Level of Care: 1990/91 Fiscal Year

|                                |               | Same Care and Level |          | Changing Care or Level |          | Died No   |          | Died Yes  |          |
|--------------------------------|---------------|---------------------|----------|------------------------|----------|-----------|----------|-----------|----------|
|                                |               | Community           | Facility | Community              | Facility | Community | Facility | Community | Facility |
| <u>FTE Clients</u>             | Personal Care | 3243.51             | 20.27    | 366.03                 | 10.24    | 327.87    | 9.74     | 38.16     | 0.51     |
|                                | IC1           | 1356.52             | 84.63    | 370.93                 | 75.23    | 320.13    | 70.42    | 50.79     | 4.81     |
|                                | IC2           | 456.25              | 151.78   | 233.48                 | 149.14   | 197.90    | 135.80   | 35.58     | 13.34    |
|                                | IC3           | 112.12              | 159.83   | 97.90                  | 133.28   | 78.50     | 119.34   | 19.40     | 13.94    |
|                                | Extended Care | 45.80               | 248.14   | 49.04                  | 104.44   | 35.27     | 73.04    | 13.77     | 31.40    |
| <u>MSP Units</u>               | Personal Care | 40.01               | 31.79    | 67.98                  | 52.86    | 61.25     | 52.01    | 125.86    | 69.24    |
|                                | IC1           | 43.07               | 33.10    | 71.12                  | 58.50    | 61.90     | 54.99    | 129.23    | 109.87   |
|                                | IC2           | 41.63               | 29.24    | 71.11                  | 59.28    | 60.49     | 53.81    | 130.18    | 114.97   |
|                                | IC3           | 39.21               | 30.70    | 70.35                  | 59.62    | 59.25     | 55.52    | 115.29    | 94.70    |
|                                | Extended Care | 48.53               | 27.16    | 87.50                  | 43.29    | 74.04     | 41.14    | 121.99    | 48.29    |
| <u>Pharmacy Prescriptions</u>  | Personal Care | 19.10               | 36.89    | 22.16                  | 50.13    | 21.29     | 49.24    | 29.67     | 67.26    |
|                                | IC1           | 22.19               | 47.83    | 23.82                  | 55.39    | 22.69     | 54.41    | 30.94     | 69.74    |
|                                | IC2           | 23.45               | 42.49    | 23.78                  | 54.69    | 22.70     | 52.55    | 29.82     | 76.53    |
|                                | IC3           | 21.56               | 38.35    | 25.13                  | 47.49    | 23.72     | 45.91    | 30.83     | 60.98    |
|                                | Extended Care | 28.63               | 6.41     | 27.12                  | 22.22    | 24.89     | 23.34    | 32.83     | 19.60    |
| <u>Hospital Days (Excl EC)</u> | Personal Care | 3.32                | 0.39     | 20.98                  | 6.10     | 16.56     | 5.44     | 58.94     | 18.79    |
|                                | IC1           | 6.97                | 1.27     | 30.90                  | 11.36    | 23.60     | 10.60    | 76.89     | 22.45    |
|                                | IC2           | 8.81                | 0.34     | 41.58                  | 11.54    | 32.98     | 9.05     | 89.41     | 36.91    |
|                                | IC3           | 11.27               | 0.74     | 43.46                  | 11.88    | 33.88     | 10.43    | 82.24     | 24.29    |
|                                | Extended Care | 17.68               | 1.04     | 70.05                  | 4.16     | 66.96     | 3.36     | 77.97     | 6.02     |
| <u>Direct Care Visits</u>      | Personal Care | 2.01                | 0.00     | 5.77                   | 0.00     | 4.79      | 0.00     | 14.21     | 0.00     |
|                                | IC1           | 6.04                | 0.00     | 12.09                  | 0.00     | 10.21     | 0.00     | 23.92     | 0.00     |
|                                | IC2           | 6.94                | 0.00     | 16.22                  | 0.00     | 14.86     | 0.00     | 23.78     | 0.00     |
|                                | IC3           | 8.73                | 0.00     | 23.22                  | 0.00     | 20.06     | 0.00     | 36.03     | 0.00     |
|                                | Extended Care | 21.94               | 0.00     | 37.04                  | 0.00     | 30.43     | 0.00     | 53.97     | 0.00     |
| <u>Homemaker Hours</u>         | Personal Care | 77.52               | 0.00     | 91.32                  | 0.00     | 90.62     | 0.00     | 97.29     | 0.00     |
|                                | IC1           | 132.55              | 0.00     | 159.47                 | 0.00     | 158.91    | 0.00     | 163.00    | 0.00     |
|                                | IC2           | 230.02              | 0.00     | 281.11                 | 0.00     | 277.96    | 0.00     | 298.62    | 0.00     |
|                                | IC3           | 349.53              | 0.00     | 450.28                 | 0.00     | 429.22    | 0.00     | 535.49    | 0.00     |
|                                | Extended Care | 476.45              | 0.00     | 670.50                 | 0.00     | 613.33    | 0.00     | 816.98    | 0.00     |
| <u>Adult Day Care Days</u>     | Personal Care | 1.06                | 0.00     | 1.54                   | 0.00     | 1.48      | 0.00     | 2.05      | 0.00     |
|                                | IC1           | 7.06                | 0.00     | 8.18                   | 0.00     | 8.06      | 0.00     | 8.94      | 0.00     |
|                                | IC2           | 14.51               | 0.00     | 17.28                  | 0.00     | 18.90     | 0.00     | 8.25      | 0.00     |
|                                | IC3           | 19.75               | 0.00     | 15.86                  | 0.00     | 18.32     | 0.00     | 5.93      | 0.00     |
|                                | Extended Care | 10.74               | 0.00     | 7.89                   | 0.00     | 9.42      | 0.00     | 3.96      | 0.00     |
| <u>All LTC Facility Days</u>   | Personal Care | 0.00                | 364.00   | 0.00                   | 362.68   | 0.00      | 362.72   | 0.00      | 362.02   |
|                                | IC1           | 0.00                | 364.00   | 0.00                   | 361.83   | 0.00      | 362.18   | 0.00      | 356.62   |
|                                | IC2           | 0.00                | 364.00   | 0.00                   | 360.25   | 0.00      | 361.16   | 0.00      | 351.00   |
|                                | IC3           | 0.00                | 364.00   | 0.00                   | 356.75   | 0.00      | 357.94   | 0.00      | 346.53   |
|                                | Extended Care | 0.00                | 364.00   | 0.00                   | 361.23   | 0.00      | 361.99   | 0.00      | 359.40   |

Table: 6-14

Comparative Average Annual Costs for Clients Who Remained in the Same Type and Level of Care, for One or More Six Month Period, by Level of Care: 1987/88, 1990/91 and 1993/94 Cohorts, in 1991/92 Dollars

|                          |               | 1987/88 Cohort |          | 1990/91 Cohort |          | 1993/94 Cohort |          |
|--------------------------|---------------|----------------|----------|----------------|----------|----------------|----------|
|                          |               | Community      | Facility | Community      | Facility | Community      | Facility |
| FTE Clients              | Personal Care | 2588.44        | 59.59    | 3243.51        | 20.27    | 2462.32        | 1.75     |
|                          | IC1           | 1036.15        | 148.25   | 1356.52        | 84.63    | 1538.32        | 49.33    |
|                          | IC2           | 313.86         | 142.25   | 456.25         | 151.78   | 643.72         | 230.91   |
|                          | IC3           | 66.83          | 135.51   | 112.12         | 159.83   | 156.42         | 204.90   |
|                          | Extended Care | 51.31          | 258.43   | 45.80          | 248.14   | 67.57          | 312.24   |
| All Costs (\$)           | Personal Care | 4352.90        | 11194.14 | 4524.91        | 11476.88 | 4299.60        | 10911.05 |
|                          | IC1           | 7234.32        | 17199.64 | 7714.59        | 17901.81 | 6506.41        | 17165.52 |
|                          | IC2           | 11139.77       | 20904.00 | 10603.89       | 20913.81 | 9580.36        | 21047.14 |
|                          | IC3           | 13058.92       | 26359.59 | 13936.41       | 26723.47 | 12727.87       | 26513.69 |
|                          | Extended Care | 16254.73       | 40730.63 | 19538.94       | 40541.28 | 16203.60       | 40443.16 |
| MSP (\$)                 | Personal Care | 885.81         | 589.95   | 974.24         | 760.67   | 1074.92        | 628.51   |
|                          | IC1           | 978.76         | 597.09   | 1059.47        | 722.86   | 1178.12        | 649.68   |
|                          | IC2           | 946.58         | 679.18   | 996.10         | 664.63   | 1066.41        | 748.03   |
|                          | IC3           | 791.53         | 590.03   | 930.79         | 694.04   | 956.54         | 693.95   |
|                          | Extended Care | 962.73         | 673.07   | 1159.17        | 616.90   | 1267.78        | 591.11   |
| Pharmacare (\$)          | Personal Care | 561.87         | 435.88   | 638.72         | 469.35   | 586.21         | 203.39   |
|                          | IC1           | 646.11         | 484.92   | 695.64         | 677.71   | 654.39         | 528.60   |
|                          | IC2           | 611.97         | 496.34   | 729.89         | 595.99   | 684.77         | 611.11   |
|                          | IC3           | 457.18         | 406.72   | 641.15         | 524.21   | 614.86         | 501.31   |
|                          | Extended Care | 688.30         | 87.79    | 883.31         | 94.06    | 700.27         | 116.54   |
| Hospital (Excl. EC) (\$) | Personal Care | 1498.33        | 89.16    | 1411.53        | 167.70   | 1220.64        | 0.00     |
|                          | IC1           | 2869.77        | 156.24   | 2961.18        | 539.85   | 2031.60        | 25.85    |
|                          | IC2           | 4977.00        | 218.10   | 3744.64        | 142.81   | 2913.91        | 177.61   |
|                          | IC3           | 5440.62        | 174.06   | 4791.43        | 316.43   | 3625.92        | 129.64   |
|                          | Extended Care | 7107.31        | 581.35   | 7512.50        | 441.88   | 4421.71        | 347.08   |
| Direct Care (\$)         | Personal Care | 132.21         | 0.00     | 110.35         | 0.00     | 92.92          | 0.00     |
|                          | IC1           | 337.47         | 0.00     | 332.13         | 0.00     | 237.51         | 0.00     |
|                          | IC2           | 543.72         | 0.00     | 381.85         | 0.00     | 360.71         | 0.00     |
|                          | IC3           | 579.49         | 0.00     | 479.91         | 0.00     | 500.49         | 0.00     |
|                          | Extended Care | 1008.25        | 0.00     | 1206.67        | 0.00     | 1151.89        | 0.00     |
| Home-makers (\$)         | Personal Care | 1217.63        | 0.00     | 1331.71        | 0.00     | 1268.08        | 0.00     |
|                          | IC1           | 2019.58        | 0.00     | 2277.24        | 0.00     | 2021.88        | 0.00     |
|                          | IC2           | 3377.76        | 0.00     | 3951.76        | 0.00     | 3613.61        | 0.00     |
|                          | IC3           | 4871.44        | 0.00     | 6004.92        | 0.00     | 5982.38        | 0.00     |
|                          | Extended Care | 5842.25        | 0.00     | 8185.45        | 0.00     | 8111.29        | 0.00     |
| Adult Day Care (\$)      | Personal Care | 57.06          | 0.00     | 58.36          | 0.00     | 56.83          | 0.00     |
|                          | IC1           | 382.63         | 0.00     | 388.93         | 0.00     | 382.92         | 0.00     |
|                          | IC2           | 682.75         | 0.00     | 799.64         | 0.00     | 940.96         | 0.00     |
|                          | IC3           | 918.66         | 0.00     | 1088.22        | 0.00     | 1047.68        | 0.00     |
|                          | Extended Care | 645.88         | 0.00     | 591.84         | 0.00     | 550.67         | 0.00     |
| All LTC Facility (\$)    | Personal Care | 0.00           | 10079.16 | 0.00           | 10079.16 | 0.00           | 10079.16 |
|                          | IC1           | 0.00           | 15961.40 | 0.00           | 15961.40 | 0.00           | 15961.40 |
|                          | IC2           | 0.00           | 19510.39 | 0.00           | 19510.39 | 0.00           | 19510.39 |
|                          | IC3           | 0.00           | 25188.80 | 0.00           | 25188.80 | 0.00           | 25188.80 |
|                          | Extended Care | 0.00           | 39388.44 | 0.00           | 39388.44 | 0.00           | 39388.40 |

Table: 6-15

Comparative Average Annual Costs for Clients Who Changed Their Type and/or Level of Care, for One or More Six Month Period, by Level of Care: 1987/88, 1990/91 and 1993/94 Cohorts, in 1991/92 Dollars

|                          |               | 1987/88 Cohort |          | 1990/91 Cohort |          | 1993/94 Cohort |          |
|--------------------------|---------------|----------------|----------|----------------|----------|----------------|----------|
|                          |               | Community      | Facility | Community      | Facility | Community      | Facility |
| FTE Clients              | Personal Care | 415.91         | 38.54    | 366.03         | 10.24    | 351.98         | 1.85     |
|                          | IC1           | 345.52         | 124.89   | 370.93         | 75.23    | 381.70         | 35.77    |
|                          | IC2           | 185.42         | 135.90   | 233.48         | 149.14   | 322.56         | 199.25   |
|                          | IC3           | 64.44          | 115.22   | 97.90          | 133.28   | 134.19         | 171.98   |
|                          | Extended Care | 49.85          | 103.88   | 49.04          | 104.44   | 59.72          | 157.15   |
| All Costs (\$)           | Personal Care | 12681.66       | 16267.61 | 13284.21       | 14538.64 | 11424.63       | 13297.55 |
|                          | IC1           | 19505.80       | 24145.08 | 19484.17       | 22755.39 | 17853.30       | 24267.44 |
|                          | IC2           | 25524.73       | 27465.03 | 26785.22       | 26328.36 | 23348.81       | 25671.56 |
|                          | IC3           | 28745.23       | 33408.84 | 30775.28       | 31731.97 | 30841.44       | 30637.33 |
|                          | Extended Care | 41163.53       | 43358.09 | 46690.59       | 42166.06 | 41899.09       | 42412.66 |
| MSP (\$)                 | Personal Care | 1527.52        | 1127.63  | 1655.27        | 1265.02  | 1690.04        | 1041.10  |
|                          | IC1           | 1720.87        | 1231.86  | 1749.24        | 1277.39  | 1879.14        | 1502.29  |
|                          | IC2           | 1592.77        | 1369.84  | 1701.70        | 1347.37  | 1723.43        | 1342.00  |
|                          | IC3           | 1598.17        | 1290.29  | 1669.84        | 1347.96  | 1729.89        | 1367.89  |
|                          | Extended Care | 1941.14        | 1095.00  | 2089.89        | 983.22   | 2082.85        | 1014.74  |
| Pharmacare (\$)          | Personal Care | 636.16         | 521.43   | 741.02         | 637.76   | 656.62         | 347.22   |
|                          | IC1           | 670.37         | 659.03   | 746.70         | 784.86   | 736.84         | 811.04   |
|                          | IC2           | 647.86         | 619.81   | 740.16         | 767.12   | 725.28         | 801.22   |
|                          | IC3           | 567.06         | 565.73   | 747.28         | 649.07   | 683.61         | 699.43   |
|                          | Extended Care | 703.82         | 321.87   | 836.81         | 326.27   | 839.12         | 293.89   |
| Hospital (Excl. EC) (\$) | Personal Care | 8745.62        | 4576.76  | 8916.65        | 2593.20  | 7189.75        | 1837.56  |
|                          | IC1           | 13675.50       | 6446.75  | 13132.90       | 4827.05  | 11845.87       | 6125.73  |
|                          | IC2           | 17475.27       | 6275.00  | 17669.84       | 4904.37  | 14527.19       | 4173.15  |
|                          | IC3           | 18389.89       | 6711.49  | 18470.92       | 5047.98  | 18092.77       | 3640.14  |
|                          | Extended Care | 27897.83       | 2982.47  | 29772.66       | 1768.10  | 23592.50       | 1849.88  |
| Direct Care (\$)         | Personal Care | 268.31         | 0.00     | 317.47         | 0.00     | 264.44         | 0.00     |
|                          | IC1           | 660.20         | 0.00     | 664.74         | 0.00     | 499.59         | 0.00     |
|                          | IC2           | 886.27         | 0.00     | 891.98         | 0.00     | 811.41         | 0.00     |
|                          | IC3           | 916.58         | 0.00     | 1277.26        | 0.00     | 1076.95        | 0.00     |
|                          | Extended Care | 1966.36        | 0.00     | 2037.10        | 0.00     | 2232.34        | 0.00     |
| Home-makers (\$)         | Personal Care | 1402.91        | 0.00     | 1568.81        | 0.00     | 1525.63        | 0.00     |
|                          | IC1           | 2338.06        | 0.00     | 2739.64        | 0.00     | 2451.16        | 0.00     |
|                          | IC2           | 4284.31        | 0.00     | 4829.47        | 0.00     | 4521.39        | 0.00     |
|                          | IC3           | 6442.75        | 0.00     | 7735.73        | 0.00     | 8221.89        | 0.00     |
|                          | Extended Care | 8386.61        | 0.00     | 11519.25       | 0.00     | 12949.58       | 0.00     |
| Adult Day Care (\$)      | Personal Care | 101.13         | 0.00     | 84.99          | 0.00     | 98.15          | 0.00     |
|                          | IC1           | 440.79         | 0.00     | 450.94         | 0.00     | 440.71         | 0.00     |
|                          | IC2           | 638.25         | 0.00     | 952.06         | 0.00     | 1040.10        | 0.00     |
|                          | IC3           | 830.78         | 0.00     | 874.25         | 0.00     | 1036.32        | 0.00     |
|                          | Extended Care | 267.78         | 0.00     | 434.91         | 0.00     | 202.71         | 0.00     |
| All LTC Facility (\$)    | Personal Care | 0.00           | 10041.79 | 0.00           | 10042.66 | 0.00           | 10071.67 |
|                          | IC1           | 0.00           | 15807.44 | 0.00           | 15866.10 | 0.00           | 15828.37 |
|                          | IC2           | 0.00           | 19200.39 | 0.00           | 19309.48 | 0.00           | 19355.17 |
|                          | IC3           | 0.00           | 24841.34 | 0.00           | 24686.97 | 0.00           | 24929.86 |
|                          | Extended Care | 0.00           | 38958.75 | 0.00           | 39088.47 | 0.00           | 39254.10 |

Table: 6-16

Comparative Average Annual Costs for Clients Who Changed Their Type and/or Level of Care but Did Not Die, for One or More Six Month Period, by Level of Care: 1987/88, 1990/91 and 1993/94 Cohorts, in 1991/92 Dollars

|                          |               | <u>1987/88 Cohort</u> |                 | <u>1990/91 Cohort</u> |                 | <u>1993/94 Cohort</u> |                 |
|--------------------------|---------------|-----------------------|-----------------|-----------------------|-----------------|-----------------------|-----------------|
|                          |               | <u>Community</u>      | <u>Facility</u> | <u>Community</u>      | <u>Facility</u> | <u>Community</u>      | <u>Facility</u> |
| FTE Clients              | Personal Care | 379.27                | 37.05           | 327.87                | 9.74            | 322.76                | 1.85            |
|                          | IC1           | 307.12                | 116.08          | 320.13                | 70.42           | 333.45                | 32.58           |
|                          | IC2           | 160.82                | 126.15          | 197.90                | 135.80          | 284.33                | 183.65          |
|                          | IC3           | 54.66                 | 103.73          | 78.50                 | 119.34          | 111.15                | 148.47          |
|                          | Extended Care | 36.58                 | 79.03           | 35.27                 | 73.04           | 40.51                 | 115.63          |
| All Costs (\$)           | Personal Care | 11145.85              | 15957.16        | 11143.73              | 14227.93        | 9888.07               | 13297.55        |
|                          | IC1           | 16769.03              | 23117.98        | 16001.34              | 22358.42        | 14936.35              | 22245.58        |
|                          | IC2           | 21773.14              | 26410.47        | 22803.13              | 25163.14        | 20567.66              | 25255.28        |
|                          | IC3           | 23776.27              | 32344.09        | 25996.13              | 31084.45        | 27461.75              | 30015.08        |
|                          | Extended Care | 37399.41              | 42826.06        | 43725.50              | 41876.34        | 39483.34              | 41736.72        |
| MSP (\$)                 | Personal Care | 1374.71               | 1055.44         | 1491.23               | 1244.68         | 1553.28               | 1041.10         |
|                          | IC1           | 1542.77               | 1145.85         | 1522.46               | 1200.77         | 1674.02               | 1384.09         |
|                          | IC2           | 1390.83               | 1313.96         | 1447.56               | 1223.01         | 1531.21               | 1280.75         |
|                          | IC3           | 1332.17               | 1186.63         | 1406.26               | 1255.32         | 1539.37               | 1237.75         |
|                          | Extended Care | 1745.69               | 1014.34         | 1768.36               | 934.37          | 1976.26               | 911.12          |
| Pharmacare (\$)          | Personal Care | 617.23                | 510.81          | 711.80                | 626.45          | 641.34                | 347.22          |
|                          | IC1           | 649.51                | 644.57          | 711.28                | 770.96          | 709.11                | 798.35          |
|                          | IC2           | 629.18                | 607.91          | 706.38                | 737.04          | 694.68                | 785.11          |
|                          | IC3           | 530.34                | 551.07          | 705.45                | 627.52          | 634.41                | 672.97          |
|                          | Extended Care | 646.13                | 325.71          | 768.04                | 342.80          | 700.32                | 308.91          |
| Hospital (Excl. EC) (\$) | Personal Care | 7411.52               | 4336.42         | 7038.65               | 2313.19         | 5852.41               | 1837.56         |
|                          | IC1           | 11197.97              | 5510.29         | 10031.75              | 4505.00         | 9252.57               | 4193.95         |
|                          | IC2           | 14080.09              | 5272.68         | 14015.02              | 3844.85         | 12061.14              | 3797.67         |
|                          | IC3           | 13831.10              | 5701.48         | 14397.80              | 4432.05         | 15120.52              | 3158.87         |
|                          | Extended Care | 25026.19              | 2484.36         | 28459.16              | 1428.55         | 23551.44              | 1258.81         |
| Direct Care (\$)         | Personal Care | 241.27                | 0.00            | 263.44                | 0.00            | 217.31                | 0.00            |
|                          | IC1           | 582.82                | 0.00            | 561.50                | 0.00            | 414.57                | 0.00            |
|                          | IC2           | 767.05                | 0.00            | 817.25                | 0.00            | 707.56                | 0.00            |
|                          | IC3           | 745.96                | 0.00            | 1103.20               | 0.00            | 879.35                | 0.00            |
|                          | Extended Care | 1469.10               | 0.00            | 1673.58               | 0.00            | 1478.27               | 0.00            |
| Home-makers (\$)         | Personal Care | 1400.34               | 0.00            | 1556.86               | 0.00            | 1519.85               | 0.00            |
|                          | IC1           | 2337.40               | 0.00            | 2730.01               | 0.00            | 2427.74               | 0.00            |
|                          | IC2           | 4208.49               | 0.00            | 4775.41               | 0.00            | 4481.45               | 0.00            |
|                          | IC3           | 6385.94               | 0.00            | 7373.94               | 0.00            | 8186.72               | 0.00            |
|                          | Extended Care | 8195.34               | 0.00            | 10536.98              | 0.00            | 11508.81              | 0.00            |
| Adult Day Care (\$)      | Personal Care | 100.79                | 0.00            | 81.74                 | 0.00            | 103.88                | 0.00            |
|                          | IC1           | 458.56                | 0.00            | 444.33                | 0.00            | 458.35                | 0.00            |
|                          | IC2           | 697.51                | 0.00            | 1041.50               | 0.00            | 1091.61               | 0.00            |
|                          | IC3           | 950.76                | 0.00            | 1009.47               | 0.00            | 1101.38               | 0.00            |
|                          | Extended Care | 316.97                | 0.00            | 519.40                | 0.00            | 268.22                | 0.00            |
| All LTC Facility (\$)    | Personal Care | 0.00                  | 10054.49        | 0.00                  | 10043.61        | 0.00                  | 10071.67        |
|                          | IC1           | 0.00                  | 15817.28        | 0.00                  | 15881.70        | 0.00                  | 15869.20        |
|                          | IC2           | 0.00                  | 19215.94        | 0.00                  | 19358.23        | 0.00                  | 19391.75        |
|                          | IC3           | 0.00                  | 24904.92        | 0.00                  | 24769.55        | 0.00                  | 24945.48        |
|                          | Extended Care | 0.00                  | 39001.63        | 0.00                  | 39170.63        | 0.00                  | 39257.80        |



Table: 6-17

Comparative Average Annual Costs for Clients Who Died, in a Six Month Period, by Level of Care:  
1987/88, 1990/91 and 1993/94 Cohorts, in 1991/92 Dollars

|                          |               | 1987/88 Cohort |          | 1990/91 Cohort |          | 1993/94 Cohort |          |
|--------------------------|---------------|----------------|----------|----------------|----------|----------------|----------|
|                          |               | Community      | Facility | Community      | Facility | Community      | Facility |
| FTE Clients              | Personal Care | 36.64          | 1.49     | 38.16          | 0.51     | 29.22          | 0.00     |
|                          | IC1           | 38.40          | 8.82     | 50.79          | 4.81     | 48.25          | 3.19     |
|                          | IC2           | 24.59          | 9.75     | 35.58          | 13.34    | 38.23          | 15.61    |
|                          | IC3           | 9.78           | 11.49    | 19.40          | 13.94    | 23.04          | 23.51    |
|                          | Extended Care | 13.27          | 24.85    | 13.77          | 31.40    | 19.20          | 41.51    |
| All Costs (\$)           | Personal Care | 28579.61       | 23984.59 | 31672.83       | 20524.14 | 28394.88       | 0.00     |
|                          | IC1           | 41393.38       | 37668.72 | 41435.72       | 28566.97 | 38012.69       | 44946.25 |
|                          | IC2           | 50057.34       | 41105.06 | 48935.84       | 38187.94 | 44034.19       | 30569.77 |
|                          | IC3           | 56522.28       | 43018.34 | 50114.88       | 32276.00 | 47148.97       | 34566.63 |
|                          | Extended Care | 51542.34       | 45050.34 | 54287.22       | 42839.88 | 46995.19       | 44295.53 |
| MSP (\$)                 | Personal Care | 3109.37        | 2922.16  | 3064.46        | 1656.85  | 3200.53        | 0.00     |
|                          | IC1           | 3145.24        | 2364.28  | 3178.63        | 2399.12  | 3296.78        | 2711.24  |
|                          | IC2           | 2913.28        | 2092.65  | 3115.32        | 2613.07  | 3153.11        | 2062.72  |
|                          | IC3           | 3085.11        | 2225.86  | 2736.44        | 2141.16  | 2649.19        | 2189.64  |
|                          | Extended Care | 2480.06        | 1351.53  | 2913.67        | 1096.85  | 2307.71        | 1303.37  |
| Pharmacare (\$)          | Personal Care | 832.19         | 785.31   | 992.07         | 855.69   | 825.41         | 0.00     |
|                          | IC1           | 837.19         | 849.50   | 969.94         | 988.31   | 928.49         | 940.86   |
|                          | IC2           | 769.98         | 773.71   | 928.08         | 1073.31  | 952.86         | 990.78   |
|                          | IC3           | 772.34         | 698.08   | 916.57         | 833.53   | 920.99         | 866.50   |
|                          | Extended Care | 862.88         | 309.68   | 1012.99        | 287.81   | 1131.90        | 252.05   |
| Hospital (Excl. EC) (\$) | Personal Care | 22555.70       | 10550.96 | 25050.22       | 7987.23  | 21959.75       | 0.00     |
|                          | IC1           | 33489.91       | 18777.08 | 32678.73       | 9541.74  | 29768.45       | 25883.39 |
|                          | IC2           | 39677.28       | 19239.44 | 38000.03       | 15688.20 | 32868.88       | 8591.41  |
|                          | IC3           | 43874.03       | 15826.84 | 34953.44       | 10321.46 | 32434.41       | 6679.32  |
|                          | Extended Care | 35815.81       | 4566.85  | 33137.84       | 2557.81  | 23679.13       | 3496.36  |
| Direct Care (\$)         | Personal Care | 548.16         | 0.00     | 781.68         | 0.00     | 784.96         | 0.00     |
|                          | IC1           | 1279.01        | 0.00     | 1315.46        | 0.00     | 1087.15        | 0.00     |
|                          | IC2           | 1665.92        | 0.00     | 1307.65        | 0.00     | 1583.82        | 0.00     |
|                          | IC3           | 1870.40        | 0.00     | 1981.63        | 0.00     | 2030.42        | 0.00     |
|                          | Extended Care | 3337.44        | 0.00     | 2968.45        | 0.00     | 3823.06        | 0.00     |
| Home-makers (\$)         | Personal Care | 1429.54        | 0.00     | 1671.45        | 0.00     | 1589.42        | 0.00     |
|                          | IC1           | 2343.38        | 0.00     | 2800.36        | 0.00     | 2613.04        | 0.00     |
|                          | IC2           | 4780.11        | 0.00     | 5130.21        | 0.00     | 4818.48        | 0.00     |
|                          | IC3           | 6760.30        | 0.00     | 9199.75        | 0.00     | 8391.57        | 0.00     |
|                          | Extended Care | 8914.00        | 0.00     | 14035.80       | 0.00     | 15988.87       | 0.00     |
| Adult Day Care (\$)      | Personal Care | 104.64         | 0.00     | 122.96         | 0.00     | 34.79          | 0.00     |
|                          | IC1           | 298.64         | 0.00     | 492.61         | 0.00     | 318.78         | 0.00     |
|                          | IC2           | 250.75         | 0.00     | 454.53         | 0.00     | 657.03         | 0.00     |
|                          | IC3           | 160.11         | 0.00     | 327.04         | 0.00     | 722.41         | 0.00     |
|                          | Extended Care | 132.16         | 0.00     | 218.43         | 0.00     | 64.52          | 0.00     |
| All LTC Facility (\$)    | Personal Care | 0.00           | 9726.16  | 0.00           | 10024.38 | 0.00           | 0.00     |
|                          | IC1           | 0.00           | 15677.88 | 0.00           | 15637.79 | 0.00           | 15410.77 |
|                          | IC2           | 0.00           | 18999.28 | 0.00           | 18813.38 | 0.00           | 18924.84 |
|                          | IC3           | 0.00           | 24267.58 | 0.00           | 23979.88 | 0.00           | 24831.19 |
|                          | Extended Care | 0.00           | 38822.28 | 0.00           | 38897.41 | 0.00           | 39243.75 |

## Sensitivity Analysis

It is customary to conduct a sensitivity analysis of the results of economic evaluations. Sensitivity analyses can be conducted on the assumptions inherent in a study and on assumptions about data such as unit cost estimates. Both types of assumptions will be reviewed in this section.

The purpose of the analysis in this study has been to conduct a comparative cost analysis of home/community clients versus residential clients. By using the concept of FTE clients this study has been able to achieve a very clear cost comparison. The method used allowed for the inclusion of most of the selected sample in the analysis.

The approach used in this study so far can be criticized on at least two counts. First, it may be argued that the method produces artificial results which cannot be extrapolated to a real world context. In the real world assessors/case managers may not be able to identify which clients destined for facility care will be stable and can be streamed into community services to maximize the cost-effective substitution of care. What would the study results be if one were to analyze the comparative costs for home/community care and residential care based only on the type and level of care at first care? Furthermore, even if substitutions can be made, how much more costly would it be to stream facility bound clients to home care? These potential additional costs are not included in the analysis.

The second major criticism of this study would be to argue that home care and facility care clients are different and thus cannot be validly compared. One could argue that a valid comparative cost analysis could only be achieved if facility bound clients were identified and then randomly assigned to home care and residential care. These potential criticisms of the method used for this study are discussed below. This study could also be criticized for not adopting an overall societal perspective. This matter will be discussed in the next section on limitations of the study.

Additional analyses were conducted to test out the validity of the assumptions and approach used in this study. The findings of these additional analyses appear to indicate that, with some modifications, the findings from this study are relatively robust.

In order to address the generalizability of the findings in this study to a real world context, an analysis of service utilization and costs was conducted for individual clients based only on their type and level of care at the start of care. In order to deal with the question of the appropriateness of the comparisons made, and the development of an estimate of the extent of additional resources which may be required to stream facility destined clients back into home care, an analysis was conducted of clients who had both community care and facility care. In general, this would be clients who were receiving home care while they were waiting for a facility placement. The FTE client method was used to partition out the community and facility portions of their care.

The issue of confounds due to lack of random assignment of clients was given considerable thought and different options were considered. An analysis of instrumental activities of daily living

scores and mental health scores indicated somewhat higher scores for facility clients. Thus, while clients were quite comparable in terms of their functional abilities as measured by their activities of daily living, the same degree of comparability was lacking for these other scales. Consideration was given to conducting a discriminant function analysis to determine which variables were predictive of assignment to home care and residential care and then developing matched samples of community and facility clients based on the variables which discriminated between home care and residential care clients. However, there is still a degree of potential bias for matched samples. In the end it was determined that the most appropriate approach would be to analyse clients who had both facility and community care and to partition their episode of care into home care and residential care components. This method provided an assurance that the cost comparison would be made on clients who were definitely facility clients. It was anticipated that the costs for the home care portion of care would be higher, by level of care, than those presented earlier in this study. It was felt that this cost differential would provide a realistic estimate of the upper range of additional costs required to stream facility bound clients into home care. Tables 6-18 to 6-20 present the results of these analyses.

With regard to the issue of the "real world client" it appears from Table 6-19 that the costs, by type and level of care, are very similar for clients using the FTE client approach and using the client's status at first care. In general, the costs are slightly higher for the first care individuals at the PC to IC2 levels. However, the costs are the same or lower for the IC3 and EC clients. Thus, the cost estimates presented in this study appear to be quite robust and adaptable to planning in real world settings.

It is interesting to note why the costs for the first care individuals cohort and the FTE client cohort are similar. Inspection of Tables 6-18 and 6-11 reveals that, for most services, service utilization is similar at the lower levels of care. However, what seems to happen is that there is a trade-off between acute care costs and long term care facility costs for clients at the higher levels of care. As noted earlier, hospital costs are considerably lower for residential clients. It appears that when clients go into long term care facilities their facility costs go up but their utilization of other services, including hospital services, decreases. Given the high proportion of costs for home care clients accounted for by hospital care, there is essentially a cost trade-off between hospital care and residential care as clients move from home care to residential care.

On the issue of substituting home care for facility care, it appears from Tables 6-11, 6-18 and 6-19 that service utilization and costs are higher for the home care portion of care for those who had both community and facility care (the "facility clients") compared to the FTE clients, particularly at the lower levels of care. However, the costs for facility care are quite comparable for the two groups. The fact that the facility costs are similar is reassuring as it indicates that the facility client cohort is quite comparable to clients who only had facility care. For the intermediate and higher levels of care (IC2 to EC) it appears that the costs of the home care portion of the cohort of individuals who received both home care and facility care is about 10 to 30 percent higher than costs for the FTE client cohort. This ratio was somewhat consistent whether individuals remained in the same type and level of care or changed their type and/or level of care. This differential may be reflective of

Table: 6-18

Comparison of Average Annual Service Utilization for FTE Clients Who Received Both Community and Facility Care and for Individual Clients, by Level of Care: 1990/91 Cohort

|                                 |               | FTE Clients with Community and Facility Care |          | Individual Clients |          |
|---------------------------------|---------------|--|----------|--------------------|----------|
|                                 |               | Community                                    | Facility | Community          | Facility |
| <u>Clients</u>                  | Personal Care | 114.41                                       | 12.09    | 3910.00            | 89.00    |
|                                 | IC1           | 245.94                                       | 80.66    | 1912.00            | 22.00    |
|                                 | IC2           | 213.46                                       | 187.35   | 737.00             | 192.00   |
|                                 | IC3           | 84.38  | 179.79   | 202.00             | 116.00   |
|                                 | Extended Care | 37.97  | 127.89   | 207.00             | 288.00   |
| <u>MSP Units</u>                | Personal Care | 60.43  | 33.05    | 41.83              | 36.09    |
|                                 | IC1           | 52.75  | 47.11    | 47.16              | 41.11    |
|                                 | IC2           | 53.70  | 45.63    | 47.95              | 45.28    |
|                                 | IC3           | 53.53  | 43.54    | 45.83              | 37.06    |
|                                 | Extended Care | 62.21  | 34.94    | 46.94              | 36.02    |
| <u>Pharmacy Prescriptions</u>   | Personal Care | 19.05  | 41.29    | 19.77              | 40.24    |
|                                 | IC1           | 18.76  | 54.45    | 25.21              | 36.39    |
|                                 | IC2           | 20.12  | 50.64    | 26.15              | 40.40    |
|                                 | IC3           | 20.96  | 42.20    | 23.37              | 36.26    |
|                                 | Extended Care | 22.68  | 13.37    | 21.67              | 7.90     |
| <u>Hospital Days (Excl. EC)</u> | Personal Care | 27.56  | 1.41     | 7.87               | 6.59     |
|                                 | IC1           | 25.66  | 6.31     | 14.80              | 14.55    |
|                                 | IC2           | 30.71  | 5.64     | 20.45              | 14.88    |
|                                 | IC3           | 30.14  | 6.04     | 22.53              | 10.30    |
|                                 | Extended Care | 59.35  | 2.19     | 25.93              | 4.33     |
| <u>Direct Care Visits</u>       | Personal Care | 7.19   | 0.00     | 3.21               | 0.41     |
|                                 | IC1           | 9.57   | 0.00     | 6.37               | 0.97     |
|                                 | IC2           | 9.99   | 0.00     | 8.19               | 0.44     |
|                                 | IC3           | 12.53  | 0.00     | 9.27               | 0.53     |
|                                 | Extended Care | 23.85  | 0.00     | 13.16              | 0.80     |
| <u>Homemaker Hours</u>          | Personal Care | 107.13                                       | 0.00     | 70.78              | 2.33     |
|                                 | IC1           | 158.52                                       | 0.00     | 99.83              | 2.56     |
|                                 | IC2           | 250.77                                       | 0.00     | 133.28             | 1.47     |
|                                 | IC3           | 381.85                                       | 0.00     | 177.80             | 8.02     |
|                                 | Extended Care | 548.98                                       | 0.00     | 210.23             | 4.41     |
| <u>Adult Day Care Days</u>      | Personal Care | 4.81   | 0.00     | 1.31               | 0.31     |
|                                 | IC1           | 16.91  | 0.00     | 6.16               | 0.42     |
|                                 | IC2           | 27.15  | 0.00     | 7.32               | 0.99     |
|                                 | IC3           | 25.69  | 0.00     | 7.33               | 0.47     |
|                                 | Extended Care | 18.93  | 0.00     | 5.98               | 0.08     |
| <u>All LTC Facility Days</u>    | Personal Care | 0.00   | 363.92   | 11.20              | 314.62   |
|                                 | IC1           | 0.00   | 362.72   | 43.55              | 324.30   |
|                                 | IC2           | 0.00   | 362.17   | 83.41              | 329.49   |
|                                 | IC3           | 0.00   | 360.53   | 97.43              | 334.31   |
|                                 | Extended Care | 0.00   | 362.64   | 90.80              | 349.39   |

Table: 6-19

Comparison of Average Annual Costs for All FTE Clients, FTE Clients Who Received Both Community and Residential Services and Individual Clients, by Level of Care: 1987/88, 1990/91 and 1993/94 Cohorts, in 1991/92 Dollars

|                                     |               | All FTE Clients |          | FTE Clients with Both<br>Community and Facility<br>Care |          | Individual Clients |          |
|-------------------------------------|---------------|-----------------|----------|---|----------|--------------------|----------|
|                                     |               | Community       | Facility | Community   | Facility | Community          | Facility |
| All Costs<br>1987/88<br>Cohort (\$) | Personal Care | 5505.89         | 13186.73 | 14534.65  | 13684.7  | 7031.27            | 14396.84 |
|                                     | IC1           | 10303.09        | 20375.47 | 16105.98  | 20271.41 | 13206.72           | 24040.33 |
|                                     | IC2           | 16481.89        | 24109.59 | 20777.38  | 23950.22 | 19179.52           | 27896.03 |
|                                     | IC3           | 20759.61        | 29598.94 | 22018.67  | 29893.97 | 23346.59           | 30013.72 |
|                                     | Extended Care | 28529.36        | 41483.97 | 37715.16  | 41563.66 | 26579.56           | 39995.25 |
| All Costs<br>1990/91<br>Cohort (\$) | Personal Care | 5413.16         | 12504.54 | 16321.27  | 11990.81 | 6643.68            | 13869.85 |
|                                     | IC1           | 10241.82        | 20185.97 | 16970.64  | 20387.73 | 12875.95           | 22882.3  |
|                                     | IC2           | 16081.34        | 23597.33 | 21319.19  | 23557.53 | 18737.67           | 27217.61 |
|                                     | IC3           | 21786.06        | 29000.83 | 23370.31  | 29077.19 | 21902.5            | 30897.03 |
|                                     | Extended Care | 33579.41        | 41022.56 | 39196.69  | 41161.34 | 29370.45           | 38743.97 |
| All Costs<br>1993/94<br>Cohort (\$) | Personal Care | 5190.72         | 12137.07 | 16089.59  | 14408.92 | 6294.8             | 14252.32 |
|                                     | IC1           | 8762.18         | 20150.58 | 16079.04  | 19554.09 | 11521.31           | 23934.41 |
|                                     | IC2           | 14176.47        | 23189.19 | 17832.41  | 23424.86 | 18337.36           | 24730.48 |
|                                     | IC3           | 21091.78        | 28395.42 | 24213.92  | 28446.44 | 19810.73           | 29379.63 |
|                                     | Extended Care | 28258.7         | 41102.53 | 37510.03  | 41306.22 | 24378.69           | 39060.66 |

Table: 6-20

Comparison of Average Annual Costs for Different Types of Clients, by Level of Care, who Received Both Community and Facility Care: 1987/88, 1990/91 and 1993/94 Cohorts, in 1991/92 Dollars

|                               | Same Care and Level |          | Changing Care Level |          | Died No   |          | Died Yes  |          |
|-------------------------------|---------------------|----------|---------------------|----------|-----------|----------|-----------|----------|
|                               | Community           | Facility | Community           | Facility | Community | Facility | Community | Facility |
| All Costs 1987/88 Cohort (\$) |                     |          |                     |          |           |          |           |          |
| Personal Care                 | 8056.36             | 11329.16 | 23981.63            | 15660.04 | 23928.56  | 15294.73 | 26649.67  | 29132.84 |
| IC1                           | 9528.40             | 17295.34 | 23659.89            | 22424.52 | 23190.31  | 21903.56 | 39984.47  | 31000.59 |
| IC2                           | 16084.31            | 20801.50 | 24765.33            | 26451.17 | 24417.30  | 25856.83 | 33266.56  | 35160.19 |
| IC3                           | 17150.41            | 26248.70 | 25309.00            | 32549.63 | 23615.48  | 31449.91 | 62909.22  | 43287.16 |
| Extended Care                 | 24072.92            | 40706.75 | 48429.00            | 42480.50 | 46584.31  | 42125.19 | 66515.44  | 44099.78 |
| All Costs 1990/91 Cohort (\$) |                     |          |                     |          |           |          |           |          |
| Personal Care                 | 9221.26             | 11159.98 | 28606.98            | 12961.92 | 28625.22  | 12711.35 | 27995.20  | 20653.20 |
| IC1                           | 10499.86            | 18274.03 | 25420.59            | 21895.44 | 24111.72  | 21487.25 | 52085.34  | 27525.31 |
| IC2                           | 13072.42            | 20922.47 | 28836.98            | 25540.72 | 27583.78  | 24741.84 | 52353.28  | 34570.91 |
| IC3                           | 15100.79            | 26751.28 | 29456.03            | 31150.14 | 28488.36  | 30434.23 | 38277.72  | 38702.91 |
| Extended Care                 | 17925.97            | 40591.31 | 51636.44            | 41772.38 | 51602.34  | 41611.06 | 51855.56  | 42281.41 |
| All Costs 1993/94 Cohort (\$) |                     |          |                     |          |           |          |           |          |
| Personal Care                 | 8966.24             | 0.00     | 26086.22            | 14408.92 | 25617.06  | 14408.92 | 44082.94  | 0.00     |
| IC1                           | 8909.75             | 17214.31 | 26896.38            | 21782.53 | 25112.38  | 20623.03 | 70795.19  | 40828.81 |
| IC2                           | 10910.91            | 21141.06 | 24340.11            | 25198.78 | 23476.73  | 24866.39 | 40793.63  | 29649.80 |
| IC3                           | 14453.72            | 26472.31 | 31286.66            | 30239.52 | 29442.84  | 29631.67 | 53082.75  | 35015.81 |
| Extended Care                 | 23000.34            | 40353.53 | 45055.19            | 42219.41 | 46293.59  | 41432.16 | 36935.44  | 45300.16 |

