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The Cost-Effectiveness of Community Based Long Term
Care Services for the Elderly Compared to
Residential Care: A British Columbia Perspective

by

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A Dissertation Submitted in Partial Fulfillment of the
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ABSTRACT

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 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.

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TABLE OF CONTENTS

	<u>Page</u>
Abstract	ii
Table of Contents	iv
List of Tables	vii
List of Figures	ix
Acknowledgements	x
Dedication	xi
CHAPTER 1 - INTRODUCTION	1
Rationale for This Study	4
Relevance of This Study	6
The Research Question	7
Overview of This Study	8
CHAPTER 2 - CONTINUING CARE SERVICES	11
Introduction	11
An Overview of Continuing Care Services in Canada	11
Setting the Context	11
Understanding Service Delivery Systems: The Emergence of Four Common Terms	16
The British Columbia Continuing Care System	21
Introduction	21
An Overview of the System	25
Components of the Continuing Care System	30
Service Utilization	31
CHAPTER 3 - THE EVOLUTION OF HEALTH, SOCIAL SERVICES AND CONTINUING CARE SERVICES, IN CANADA	33
Introduction	33
The Emergence of Social Security in Canada (the 1700s to 1945)	35
Health Services	35
Social Services	36
Continuing Care	39
The Consolidation of Social Security (1945 - early 1970s)	41
Health Services	41
Social Services	44
Continuing Care	46

Table of Contents (Continued)

Fiscal Retrenchment (early 1970s - early 1990s)	47
Health Services	47
Social Services	51
Continuing Care	52
Reform and Retrenchment (early 1990s - present)	56
Health Services	56
Social Services	60
Continuing Care	62
Discussion	63
CHAPTER 4 - A LITERATURE REVIEW OF THE COST-EFFECTIVENESS OF CONTINUING CARE SERVICES	66
Introduction	66
Findings that Home Care is not Cost-Effective	66
Findings that Home Care is Cost-Effective	74
Informal Supports	80
Systems of Service Delivery	82
Discussion	82
CHAPTER 5 - SETTING A CONTEXT FOR THE ANALYSIS	84
Introduction	84
The Study in Context	84
Selection of the Analytical Approach	87
Introduction	87
Literature Review	88
Client Outcomes	91
Methods	98
Source of the Data	98
Nature of the Data and Data Quality	100
Data Validation and Cleaning Procedures	105
Selection of the Sample for Analysis	109
Method for Calculating Full Time Equivalent Clients	112
Methods for Calculating Costs	115
CHAPTER 6 - KEY FINDINGS	121
Overview of Clients in the Study	121
Comparative Cost Analysis	124
Sensitivity Analysis	144
Limitations of This Study	153

Table of Contents (Continued)

CHAPTER 7 - DISCUSSION OF FINDINGS	156
Introduction	156
Discussion of the Major Findings of This Study	157
Comparison of Findings with the Literature	161
The British Columbia Continuing Care Planning and Resource Allocation Model	167
Implications of the Study Findings for Future Research	176
CHAPTER 8 - CONCLUSIONS AND FUTURE POLICY AGENDAS	178
Introduction	178
A Policy Agenda for Organizing and Managing Continuing Care Services	178
A Policy Agenda for Legislative and Administrative Policy	185
A Policy Agenda for Service Delivery	191
A Policy Agenda for Resource Allocation	193
A Policy Agenda for Information Systems	196
A Policy Agenda for Improving Cost-Effectiveness Research in Continuing Care	198
Concluding Comments	201
APPENDIX A: AN OVERVIEW OF ECONOMIC ANALYSIS AND ITS APPLICATION TO STUDIES OF CONTINUING CARE	203
BIBLIOGRAPHY	222

LIST OF TABLES

		<u>Page</u>
Table 2-1	The Core Components of the Continuing Care Service Delivery System - Community Based Services	13
Table 2-2	The Core Components of the Continuing Care Service Delivery System - Residential Services	14
Table 2-3	Examples of Additional Services Which May be Included in the Continuing Care System	15
Table 2-4	A Comparison of Changes in Funding for the Continuing Care Division: 1984/85 to 1992/93	25
Table 2-5	Unique Clients by Age and Sex for the 1991/92 Fiscal Year (April 1991 - March 1992)	32
Table 5-1	Subject Headings and Keywords Used in the MEDLINE Literature Search	89
Table 5-2	Multiple Assessments in First Year Before Care, 1987/88 Cohort	101
Table 5-3	Multiple Assessments in the First Year, 1987/88 Cohort	101
Table 5-4	Actual Versus Approved Care 1987/88 Cohort	103
Table 5-5	Selection of Samples for the Study	111
Table 5-6	Costs per MSP Billable Units and Per Pharmacare Prescriptions: 1990/91 Cohort	120
Table 6-1	Distribution of Age and Gender: 1987/88 Cohort	122
Table 6-2	Distribution of Age and Care Level: 1987/88 Cohort	122
Table 6-3	Distribution of Gender and Marital Status: 1987/88 Cohort	123
Table 6-4	Care Levels and Average Activities of Daily Living Item Scores for Home Care and Facility Care: 1987/88 Cohort	125
Table 6-5	Comparison of Service Utilization by Quarter for the Year Prior to First Care and the Two Years After: 1990/91 Cohort	126
Table 6-6	Comparisons 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	128
Table 6-7	Comparative Analysis of Average Service Utilization for Community Care and Facility Care Clients by Six Month Periods: 1990/91 Cohort	131
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	132
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	133
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	134

List of Tables (Continued)

Table 6-11	Comparison of Average Annual Service Utilization, by Level of Care: 1987/88, 1990/91 and 1993/94 Cohorts	136
Table 6-12	Comparison of Average Annual Costs, by Level of Care: 1987/88, 1990/91 and 1993/94 Cohorts, in 1991/92 Dollars	137
Table 6-13	Comparison of Average Annual Service Utilization for Different Types of Clients, by Level of Care: 1990/91 Fiscal Year	139
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	140
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	141
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	142
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.	143
Table 6-18	Comparison of Average Annual Service Utilization by FTE Clients Who Received Both Community and Facility Care and for Individual Clients, by Level of Care: 1990/91 Cohort	147
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	148
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	149
Table 7-1	Comparison of the American Market/Insurance Model of the 1980s and the Managed Care System in British Columbia	166
Table 7-2	A Comparison of Actual and Proposed Utilization Rates to the 1988/89 Base Year	171
Table 7-3	Comparing Weissert's Seven Reasons Why it is so Hard to Make Community Care Cost-Effective to the British Columbia Experience	175

LIST OF FIGURES

		<u>Page</u>
Figure 1-1	Population Growth Statistics (1996-2016)	2
Figure 2-1	The Origins and Current Status of the Continuing Care System	17
Figure 2-2	The British Columbia Continuing Care System in 1993	29
Figure 7-1	Major Phases in the Utilization of Home Care and Residential Care: 1983/84 to 1994/95	172

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DEDICATION

The author dedicates this dissertation to his wife who has made the seemingly impossible, possible.

CHAPTER 1

INTRODUCTION

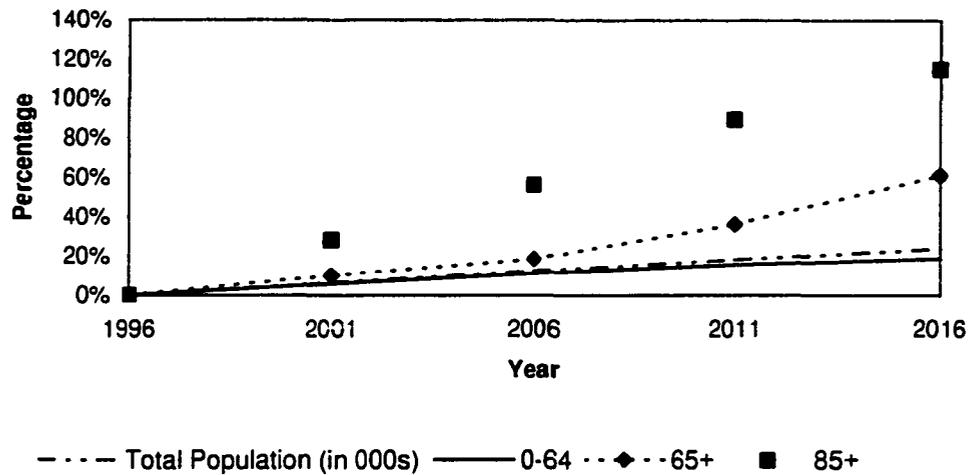
The purpose of this study is to investigate the relative cost-effectiveness of home care services for the elderly compared to care in long term care facilities. This subject is especially timely in Canada in light of our aging population. Concern has been expressed in the popular media and some academic 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 Canadians¹ 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.²

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

¹The 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.

²Hollander 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.

**Cumulative Population Growth for Canadians Aged 0-64,
65+, 85+ and the Total Population**



	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)

become an increasingly larger percentage of seniors; in other words, the 85+ population will increase as a percentage of the 65+ population.³

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 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.

³These 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).

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.⁴ The interest in home care has also led to greater coverage of this topic by the popular media in Canada.⁵

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

⁴Due 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.

⁵The 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.

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. 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 1998.⁶

⁶The 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.

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.

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.⁷ 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.

⁷In 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).

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 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.

(Federal/Provincial/Territorial Subcommittee on Continuing Care, 1992, p. 3)

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.

Table: 2-1

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

Community Care

- **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.

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

 Residential Care

- **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

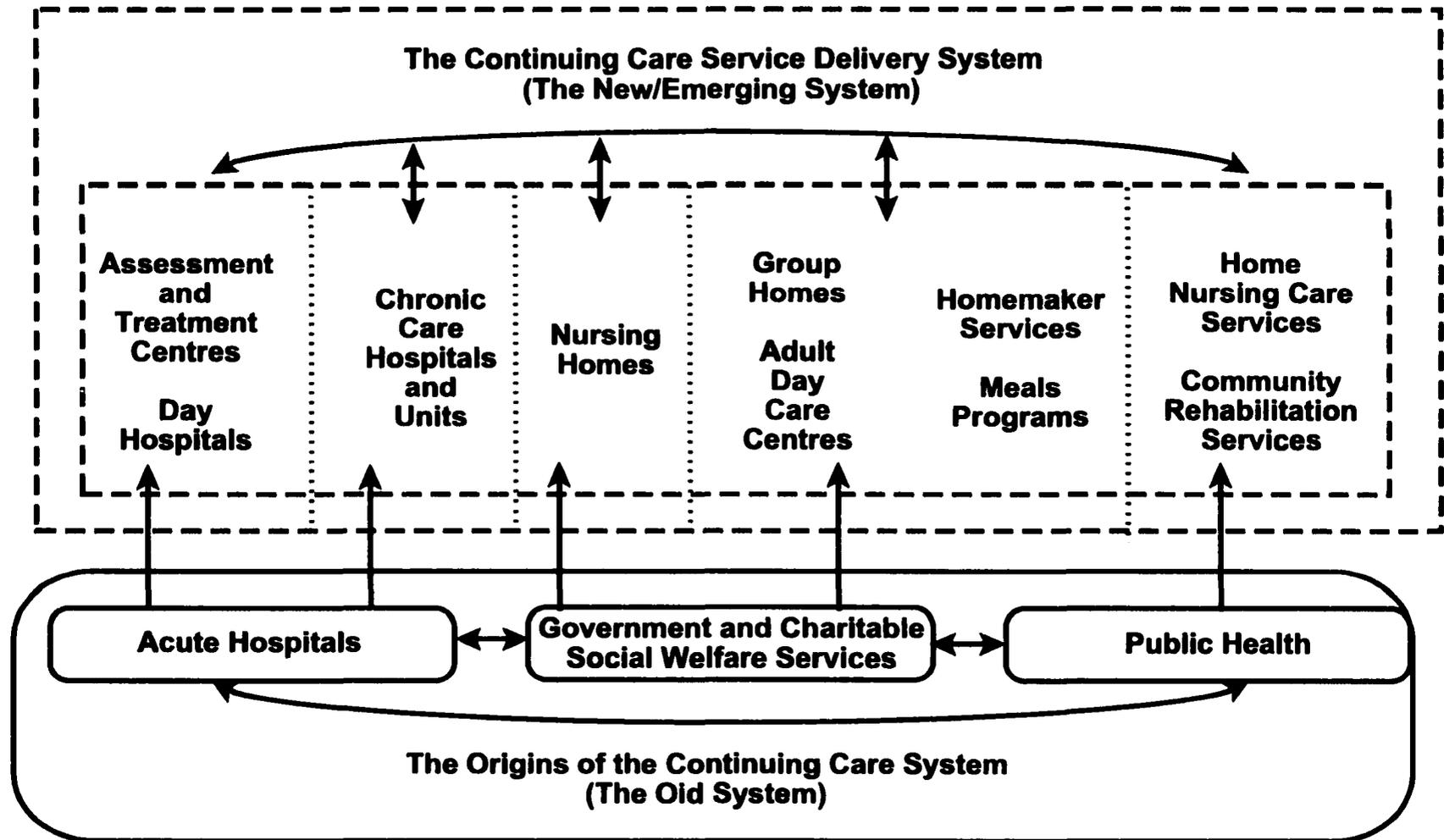
Other Services
<ul style="list-style-type: none"> • Equipment and Supplies may be provided as required to maintain a person's health, e.g., medical gases, assisted breathing apparatus, and to improve the opportunities for self-care and a better quality of life, e.g., wheelchairs, walkers, electronic 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.

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.

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



Source: Hollander, 1994, p. 10

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

home care.⁸ *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, 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

⁸The 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).

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.⁹

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

⁹The 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 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.

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 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.¹⁰ 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)

¹⁰During 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 (Millions of \$)	1992/93 (Millions of \$)	Percentage 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
TOTAL	292	652.4	123.4

*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.)

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 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.¹¹ 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.

¹¹The 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.

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.

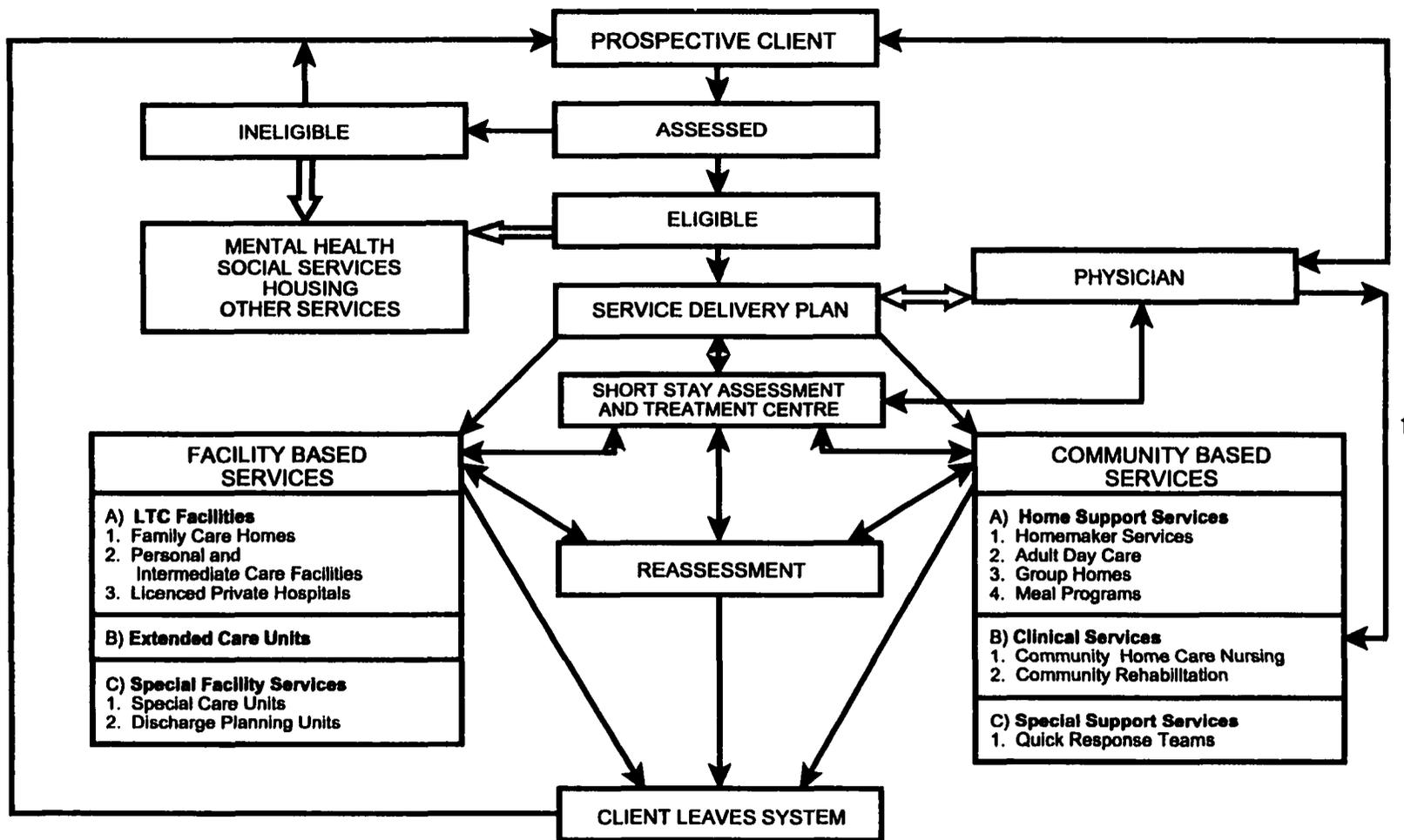
Reassessments and reviews of service need also occur in two ways. In the Long Term Care Program, this reassessment is scheduled at regular intervals, although non-scheduled reassessments are conducted when need is demonstrated. In the Clinical Services Programs, reassessment is a continuous process. 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.



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

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.¹²

¹²For 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.

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 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.

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	n	16,466	22,309	15,154	7,155	3	371	798	3,018	8,515	9,604
	% ¹			67.93	32.07	0.01	1.66	3.58	13.53	38.17	43.05
Extended Care Units	n	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	n		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	n	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	n	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	n	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	n		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	n		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	n	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	n	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	n		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	n		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	n		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

¹Percent sign refers to data in the columns for sex and age groups

Source: Hollander and Pallan, 1995, p. 100

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.¹³ 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.

¹³Armitage (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.

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.¹⁴ 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 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

¹⁴The 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.

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.¹⁵

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

¹⁵As 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), Spiane (1965), and Taylor (1978, 1987). Much of the text in this chapter is based on these sources.

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 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,¹⁶ 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

¹⁶For 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).

governments started to pay for these services or to fund 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 Services¹⁷

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 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

¹⁷Much 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.

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.¹⁸

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

¹⁸It 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.

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).

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 1966¹⁹ 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

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

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 (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.²⁰ 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

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

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 has a relatively well developed adult day care sector.²¹

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

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

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 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).²²

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.

²²When 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).

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.

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.²³

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

²³The 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.

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 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 1986.²⁴ 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.

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

²⁴While 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.

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.²⁵

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.²⁶ 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

²⁵The 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.

²⁶British 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.

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.²⁷ An example of change occurring during the process of reform can be seen in British Columbia. The 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.²⁸

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

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

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

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 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*.²⁹ 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

²⁹There 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.

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 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.³⁰

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.

³⁰These 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.³¹ 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

³¹For 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.

to the experimental and control groups.³² 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 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

³²In 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.

residential care because it did not decrease the rate of admission to long term care facilities and, as such, constituted an add-on cost.³³

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

³³The 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.

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 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).³⁴

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

³⁴Hughes (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.

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.³⁵

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” subgroup 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

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

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.³⁶

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.

³⁶It 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).

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 funding³⁷ 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

³⁷While 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.

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.

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-1990s³⁸, 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 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

³⁸The 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)).

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.³⁹

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.

³⁹While 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).

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.

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.

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>	chronic care
Nursing homes	extended care
Homes for the aged	<u>System of Care Component</u>
Intermediate care facilities	integrated care AND (elderly OR aged OR aging OR old age OR senior: OR geriatric:)
Skilled nursing facilities	SHMO: OR social health maintenance organization: AND (elderly OR aged OR aging OR old age OR senior: OR geriatric:)
Long term care	Program for All Inclusive Care for the Elderly
<u>System of Care Component</u>	
Delivery of health care, integrated AND (elderly OR aged OR aging OR old age OR senior: OR geriatric:)	
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

Table: 5-1

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

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

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.

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

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

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.⁴⁰

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.

⁴⁰Data 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: 5-4

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

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 so on, would be linked to the time period for that care segment.⁴¹ 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.

⁴¹As 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.⁴²

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

⁴²Some 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.

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 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.

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 ¹	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 ²	45	18	19
Clients with No Care in the First Year After Assessment	1316	1139	794
Long Hospital Stays ³	84	92	47
Clients with Short Stays ⁴	1237	1685	1708
Outliers ⁵	134	181	225
Total Samples for the Three Cohorts	7817	9023	9344

¹In 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).

²Some 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.

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

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

⁵Outliers 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.

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.^{43,44} 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.

⁴³As 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.

⁴⁴In 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).

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 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 hours per month \times .8 = 16 \times .05 for a half month = 8 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.⁴⁵

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.

⁴⁵In 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.

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 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 (Cost per billable unit)		Pharmacare (Cost per prescription)	
	Community (\$)	Facility (\$)	Community (\$)	Facility ¹ (\$)
PC	24.35	23.93	33.43	12.72
IC1	24.60	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

Note

¹The 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.

Table: 6-1

Distribution of Age and Gender: 1987/88 Cohort

Gender		Age Group at Assessment			Total
		65-74	75-84	85+	
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			Total
		65-74	75-84	85+	
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

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.

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

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	2.0
IC3	139	0.7	2.3	83	0.6775	2.4
Extended Care	126	0.6517	3.0	255	0.5639	3.4
All	5864	0.5115	1.4	828	0.9945	2.3

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.

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
FTE Clients	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
MSP Units	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: 6-5 (Continued)

		Community					Facility				
		Personal Care	IC1	IC2	IC3	Extended Care	Personal Care	IC1	IC2	IC3	Extended Care
Pharmacy	9 to 12 months prior to care	3.41	3.89	3.64	3.49	3.73	2.30	3.30	2.74	2.93	3.07
Prescriptions	6-9 months prior to care	3.59	4.07	3.94	3.53	3.79	3.44	4.07	2.78	2.88	2.86
	3-6 months prior to care	3.83	4.40	4.21	3.70	4.41	4.00	4.11	2.82	2.02	1.65
	0-3 months prior to care	4.55	5.38	5.17	5.08	5.62	5.19	3.80	2.68	1.83	0.72
	0-3 months after start of care	5.01	6.20	6.69	6.55	7.53	12.56	12.36	12.79	13.61	3.06
	3-6 months after start of care	4.98	6.02	6.82	6.51	6.62	11.04	11.66	10.79	10.60	1.91
	6-9 months after start of care	4.93	6.04	6.95	6.54	6.39	9.90	11.01	9.98	9.86	1.70
	9-12 months after start of care	5.07	6.19	7.37	6.83	6.12	10.68	11.51	10.17	9.82	1.73
	12-15 months after start of care	5.15	6.06	7.42	6.93	5.72	11.11	11.15	10.41	9.36	1.75
	15-18 months after start of care	5.22	6.26	7.57	6.62	6.23	9.52	10.72	9.66	8.16	2.00
	18-21 months after start of care	5.20	6.13	7.45	6.83	6.26	10.00	10.20	9.72	8.22	1.81
	21-24 months after start of care	5.41	6.48	7.91	7.17	6.00	10.43	10.08	10.11	9.30	2.26
Hospital Days	9 to 12 months prior to care	0.42	0.88	1.14	0.93	1.50	1.19	3.07	3.20	4.02	9.99
(Excl. EC)	6-9 months prior to care	0.52	1.20	1.61	2.67	3.15	2.52	5.98	9.88	9.81	23.19
	3-6 months prior to care	0.84	1.95	3.10	4.72	10.02	5.74	15.82	19.97	23.39	46.48
	0-3 months prior to care	3.70	8.62	13.63	11.98	23.03	13.56	26.95	34.65	42.27	64.77
	0-3 months after start of care	1.56	3.74	6.12	7.59	10.37	3.11	2.24	3.84	3.38	0.81
	3-6 months after start of care	1.70	4.77	6.29	7.25	8.33	0.63	3.38	3.71	4.14	0.53
	6-9 months after start of care	1.61	3.88	5.41	5.85	6.49	0.63	5.06	3.44	3.48	0.71
	9-12 months after start of care	1.68	3.22	4.53	4.66	8.22	0.00	1.76	2.75	3.62	0.93
	12-15 months after start of care	1.58	3.54	2.90	3.17	8.38	0.54	2.07	3.00	3.08	1.26
	15-18 months after start of care	1.73	3.18	3.17	2.77	6.66	0.96	1.48	3.01	1.72	0.50
	18-21 months after start of care	1.72	2.66	3.21	3.24	6.02	1.13	1.34	1.79	1.77	0.45
	21-24 months after start of care	1.77	2.71	3.13	4.29	5.49	0.70	2.66	0.74	2.01	0.65

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	Personal Care	IC1	IC2	IC3	Extended Care
All Costs (\$)	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	
MSP (\$)	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	Personal Care	IC1	IC2	IC3	Extended Care
Pharmacare (\$)	9 to 12 months prior to care	109.72	109.13	92.26	83.04	118.52	31.12	47.21	40.54	40.21	50.72
	6-9 months prior to care	115.32	113.96	99.55	83.83	120.41	46.68	58.25	41.16	39.48	47.23
	3-6 months prior to care	123.09	123.31	106.19	87.87	140.07	54.21	58.91	41.69	27.64	27.32
	0-3 months prior to care	146.37	150.72	130.46	120.88	178.45	70.27	54.43	39.75	25.13	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	186.70	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	145.47	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	135.17	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	134.74	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	128.42	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	111.94	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	112.82	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	127.59	37.38	
Hospital (Excl. EC) (\$)	9 to 12 months prior to care	178.38	374.90	485.39	396.95	637.50	503.70	1304.20	1361.01	1706.49	4246.85
	6-9 months prior to care	221.61	508.37	682.68	1135.85	1340.77	1070.37	2543.51	4196.88	4168.89	9853.70
	3-6 months prior to care	356.08	828.84	1319.29	2004.19	4257.59	2439.81	6725.38	8487.34	9940.45	19753.05
	0-3 months prior to care	1571.46	3663.86	5793.42	5091.37	9787.65	5761.11	11455.53	14725.74	17966.78	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	1437.21	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	1759.16	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	1477.06	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	1538.28	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	1308.60	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	731.76	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	752.31	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	855.51	274.47	

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. Pharmicare 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.

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)

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 Average for In Care Group	
	<u>Community</u>				<u>Facility</u>					
	<u>PERIOD</u>				<u>PERIOD</u>				Community	Facility
	1	2	3	4	1	2	3	4		
<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 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 (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 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 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 Average for In Care Group	
	<u>Community</u>				<u>Facility</u>					
	<u>PERIOD</u>				<u>PERIOD</u>				<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
Pharmacare (\$)	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	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	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	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	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	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	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	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	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
Pharm- 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.

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 6-9⁴⁶ 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

⁴⁶It 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: 6-11

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- 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 (Excl. EC) (\$)	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 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- 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 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 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

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.

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.

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

		1987/88 Cohort		1990/91 Cohort		1993/94 Cohort	
		Community	Facility	Community	Facility	Community	Facility
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

- 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.

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.

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 Community and Facility Care		Individual Clients	
		Community	Facility	Community	Facility	Community	Facility
All Costs 1987/88 Cohort (\$)	Personal Care	5505.89	13186.73	14534.65	13684.70	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 1990/91 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	22882.30
	IC2	16081.34	23597.33	21319.19	23557.53	18737.67	27217.61
	IC3	21786.06	29000.83	23370.31	29077.19	21902.50	30897.03
	Extended Care	33579.41	41022.56	39196.69	41161.34	29370.45	38743.97
All Costs 1993/94 Cohort (\$)	Personal Care	5190.72	12137.07	16089.59	14408.92	6294.80	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	28258.70	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

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 the range of additional costs required to stream clients who would normally go into facility care back into the community.

The costs for home care clients are generally higher in the 1990/91 cohort, primarily due to a comparatively higher average use of hospital days for community based extended care clients. While the costs for home care for clients who used both home care and residential services are only slightly lower than the costs of the residential care portion for the 1990/91 cohort, the costs for home care are still some 10 to 20 percent lower than for facility care in the other two cohorts. Though some additional resources may be required to stream facility bound clients into home care, these additional costs, plus baseline home care costs, are generally still less than the costs of facility care.

In terms of sensitivity analysis related to the actual data, one can vary the unit cost estimate of drugs, direct care and adult day care quite significantly (for example by 20 or even 50 percent) without having any noticeable effect on the relative cost-effectiveness of home care services compared to residential care. The same can essentially be said of physician services. However, as noted previously, the costs used in this study for MSP and Pharmacare are believed to be quite accurate and, therefore, there is little need to conduct sensitivity analysis on these costs. Next to hospital care the largest cost component of home

care was homemaker services. Again, the unit cost estimate used in this study is based on actual homemaker billing data and is believed to be quite accurate. While a significant increase in the unit cost of homemaker services, or a large increase in the volume of services provided, would be noticeable, a 50 percent increase in the unit cost, or in the volume of services provided, would only increase the overall health care costs for home care clients by about 10 percent.

The findings in this study are somewhat sensitive, for home care clients, to the hospital per diem rate selected and to the average number of days home care clients spend in the hospital, particularly for clients at the higher levels of care. In general, a 50 percent increase in hospital unit costs or in utilization would increase the overall cost for home care clients by about 25 percent. It should also be noted that home care costs are generally higher for the 1990/91 cohort than for the other two cohorts, particularly for extended care clients. A significant proportion of the differential is accounted for by the greater number of hospital days used by extended care clients in that cohort.

In terms of facility care, the results are fairly sensitive to the per diem rates of facility care as they account for most of the cost for facility clients. Planners and policy makers will want to consider the costs of facility care as part of their analysis to see if home care is indeed a cost-effective alternative to residential care. This is a significant issue because Hollander (1994) found considerable variation in the per diem costs of facility care across Canada for government run facilities, not-for-profit facilities and proprietary facilities. He also found that very small facilities (that is, about 15 beds or less) generally had much lower per diem rates than other, larger facilities). It should be remembered that the relative cost-

effectiveness of home care depends not only on the overall health care costs for home care clients, but also on the cost of facility care. There is considerably more room to make cost-effective substitutions in areas with comparatively higher facility per diem rates, assuming home care costs are not also proportionately higher.

Limitations of This Study

While it may be possible to conduct methodologically “clean” studies in a laboratory setting, this is seldom the case when one is doing applied health services research, particularly if one is using data from existing administrative data sets. Efforts were made to deal appropriately with a range of methodological issues in this study; however, there were some matters which simply could not be adequately addressed given the nature, quality and extent of the data available. This is a common situation when one is doing research in real world settings. Thus, it is incumbent on researchers to point out the potential limitations of their studies. That is what will be done in this section.

While this study may make a contribution by delineating the health related costs for government reasonably clearly for home care and residential care, by level of care, it was not possible to conduct the analysis from a broader societal perspective. Although some costs to individuals and families are known for facility care (user fees ranged from about the high teens to the high twenties from the latter 1980s to the latter 1990s), data on actual fees paid by individuals were not available (this has particular relevance to the 1993/94 fiscal year and later when clients were income tested and had to pay up to the full amount of “room and board” costs, that is, some \$34 per day in fiscal 1993/1994. This maximum co-payment was

raised to \$50 in the late 1990s). In addition, there was no individually specific financial data available for co-payments for other formal health services such as drugs and homemaker services, and no data for care related costs for individuals and family members, that is, no data on the informal costs of care.

In addition to the lack of data on the formal and informal costs of care mentioned above, data were also not available on the costs of some types of goods and services which may be used by clients in home care and residential care such as: ambulance services; hospital emergency, day care and outpatient services; services of alternative health providers such as acupuncturists, herbalists, and a range of other alternative health practitioners; and over-the-counter drugs and prescription drugs not covered by Pharmacare.

Given the nature of the data, it was not possible to randomly assign eligible clients to home care or facility care. Given the lack of case costing data, particularly the lack of detailed generally available hospital cost data, it was not possible to do precise case costing and estimates had to be used. Also, given the quality and coverage of the hospital abstracts, per diem costs for extended care level clients in hospitals may be underestimates. There is also a potential problem in regard to obtaining accurate costs if one is using charges or billings rather than actual, client specific costs. The area of case costing needs considerably more work in British Columbia and across Canada.

Due to the lack of comparable care level classification systems across Canada, this study, other than in a general sense, lacks generalizability to other jurisdictions as all of the costs are keyed to the level of care in the client classification system in British Columbia and no other jurisdiction uses the same classification system.

While the shortcomings of this study must be recognized and considered in any formulation of policy based on its findings, Chapters 7 and 8 show that this study can, nevertheless, provide useful input into policy formulation and program planning for continuing care services.

CHAPTER 7

DISCUSSION OF FINDINGS

Introduction

The findings from this study introduce a number of new elements into the discussion of the cost-effectiveness of home care. Most discussion to date has focused on the comparison of costs for home care services *per se* versus residential long term care services. Issues of concern that have been raised by colleagues with this writer have focussed on such matters as ensuring that a full accounting of home care costs is included in this study (for example, ensuring that the costs of assessors are included), and that specific, practical operational issues are addressed. For example, what are the implications for cost-effectiveness of increasing wage rates due to unionization and of labour legislation which may require agencies to pay homemakers for a minimum of four hours even when staff are only called in to provide care for two hours. While it is important to address these questions, the findings from this study indicate that in terms of their impact on the overall cost-effectiveness of home care, they are relatively minor.

The importance of the cost of hospital care on the cost-effectiveness of home care is a critical new finding with major implications for policy and program delivery. However, further replication of these findings in other jurisdictions and over time is still required to verify the findings of this study. It is interesting to note the decrease in the average number of hospital days for extended care level home care clients between the 1990/91 and 1993/94

cohorts, and the impact this difference had on the relative cost-effectiveness of home care for these two cohorts. Was the reduction due to restraint in the acute care sector and have such reductions continued into the mid and late 1990s? It would indeed be noteworthy if restraint in bed capacity in the hospital sector has led to the increased cost-effectiveness of home care compared to residential care by reducing the hospital portion of costs. Further study of this question is required. In addition, further study of the use of emergency, day care, outpatient care, day surgery and other such hospital services is required to determine if the use of these services by home care clients is increasing in order to compensate for a decrease in access to inpatient acute care beds.

This chapter will provide a discussion of the major findings of this study. It will also provide a discussion of the apparently robust findings of cost-effectiveness in this study compared to findings in the American literature that home care is not cost-effective. The third section of this chapter will present a discussion of the extent to which it may be possible to actually translate the findings of this study into a real world context, by presenting an overview of a planning and resource allocation model which was used to redistribute resources from residential care to home care in British Columbia. The final section will provide a discussion of the implications of the findings of this study for future research.

Discussion of the Major Findings of This Study

It is not often that the implications for policy and program delivery fall out of an empirical analysis like a ripe apple falls from a tree. That is, however, what seems to have happened in this study. To the extent that appropriate substitutions of home care are made

for residential care, the study has demonstrated that one can reduce overall continuing care costs, all other factors remaining constant, particularly for clients who are relatively stable. The issue of stability is important because it also reflects the converse, that home care may not be particularly cost-effective for those who change their type and level of care, and appears to be more costly for those who die. What this seems to show quite clearly is that when it comes to home care, the costs are in the transitions. This finding, coupled with the findings of the significant proportion of health costs for home care clients accounted for by hospital care, and the relatively low costs of home care *per se*, have clear policy and program implications. The challenge then is to reduce the costs of the transitions and to develop programs to decrease the use of hospital services by home care clients.

While further study and demonstration programs will be required to replicate the findings of this study, the findings seem to point to the need for pilot projects, with sound evaluations in at least a few areas. Given that the overall costs appear to be higher for home care clients than for residential clients who die, and given that much of this differential is due to the costs associated with stays in the hospital, there appears to be considerable potential for cost savings through new and innovative programs for home based palliative care and hospice care. Some considerable thought, however, must go into designing such programs. They should probably be highly targetted to individuals who use high levels of acute care hospital services. However, Hollander (1994), notes that some writers have found that the relative cost-effectiveness of community based palliative care decreases with the amount of time spent in a hospice. Thus, new programs must find ways to target appropriate individuals and to ensure at least from an economic perspective that there is an actual, cost-

effective substitution of community care for institutional care. From a care perspective, and a client needs perspective, programs should be developed that are not only cost-effective but also respond to the real needs of clients and their families. It may indeed be possible to develop programs that are cost-effective and improve the quality of care and quality of life of clients.

Another potential area for pilot projects and further evaluation is the provision of enhanced care at transition points to re-stabilize clients as quickly as possible. There has been some “nibbling at the margins” in this area as program planners have attempted to move quick response teams from emergency wards in acute care hospitals out into the community. However, little is currently known about such community focused quick response teams, or the conditions under which they may or may not be cost-effective. This is definitely an area that appears to have a significant potential for cost savings. In addition, it would be of benefit to clients in need as they would receive help quickly, when they need it, to re-stabilize themselves.

Community based quick response teams may have made limited progress because the requirements for such programs are not congruent with current administrative practices. Such programs could be seen as open-ended, “budget breaking,” programs because, at least initially, it will not be possible to accurately estimate the costs for such programs. From a policy perspective such programs may be difficult to champion because they give more service to some people than others. In addition, the per diem costs may exceed the costs of residential care for short periods of time and thus they may be hard to justify to various fiscal watchdogs. There would also be administrative and clinical challenges in operating such

programs because they may be subject to “gaming” and may simply result in the provision of enhanced services for some clients without achieving their intended purpose. Thus, again, clear targetting and a clear focus on the substitution of community services for institutional services would be required.

The above are two potentially fruitful areas for further policy and program development, there may be many more. The potential utility of targetted and substitutive programs appears to be significant now that there is an indication that the costs of home care services are significantly affected by client transitions between types and levels of care and at death. In addition, policy makers and administrators may be more willing to fund enhanced and targetted home care services given the findings in this study that home care services *per se* are a relatively small proportion of the overall health costs for home care clients.

There appears to be some room for greater efficiencies by streaming clients, who would normally be directed into residential long term care, into home care. Again, programs to do so should be quite targetted to obtain the maximum amount of cost-effective substitution of home care for residential care. Analyses similar to the one conducted for this study may reveal the degree of potential which exists for making cost-effective substitutions of home care for residential care in other jurisdictions.⁴⁷ It should, however, be stressed that these are potential savings. The amount of actual savings will depend on the additional amount of resources required to stream clients who would normally go into facilities back

⁴⁷The British Columbia continuing care system appears to be relatively efficient as it was found that the costs for keeping facility clients in the community was only modestly less than the costs of caring for them in facilities. Nevertheless, there was still some room for further efficiencies.

into the community and the extent to which facility beds are actually closed, or future bed growth is reduced from approved levels.

Comparison of Findings with the Literature

The difference between the findings in this study and the American literature seem to be attributable to three main factors: overall research design, service system characteristics, and methods. It is likely that the major difference in findings is due to the different methodological approaches used. However, the choice of methods is also affected by the nature of the service delivery system, the types of policy choices the research is intended to inform, and the conceptual framework adopted. The underlying logic of the American research appeared to be one of evaluating a policy choice of bringing about efficiencies through the expansion of funding for enhanced home care programs in a market/insurance based service delivery model which was not fully developed. This study examines the substitution of home care services for residential services, by level of care, within a fully developed, managed care model of service delivery.

A key observation about the American literature (which has been used to argue that home care is not cost-effective) is that the majority of studies cited in making such an argument do not make a direct comparison of the costs of home care with the costs of residential care. While American writers were aware of the distinctions between the three models of home care noted in Chapter 1 (Berkeley Planning Associates, 1985; Hughes, 1985), these models do not appear to have been used as a conceptual framework in their analyses. This appears to have resulted in research goals which generally include preventive

aspects and aspects of substitution, sometimes for both residential care and acute care. It appears that the American writers used the logic of the preventive model in the design of studies which had a substitutive objective. This approach was consistent with the way health services were organized in the United States in the 1980s. Unlike the care system in British Columbia, the American system was one of independent providers who were reimbursed through private or public insurance programs.⁴⁸ In the American system, clients approach providers directly to obtain care. In this type of environment, there may be more reliance on developing service delivery incentives, such as enhanced home care, to induce clients to remain in the community to prevent institutionalization. In contrast, the British Columbia model had two types of policy goals. One type was to prevent deterioration and to delay admission to a facility for lower level care needs clients and the other was to substitute home care for residential care. While the latter is also a type of prevention, it's primary purpose is substitutive. The goal of this substitution is to allow people who have passed through the primary preventive phase, and who are deemed to be eligible for facility care, to continue to remain in their homes if they wish to do so. A related policy goal is to reduce the cost of service delivery because in most cases home care costs government less than residential care.

Issues related to research design and the policy question to be addressed may account for some of the differences in findings between this study and the literature. Many of the subjects in the channeling studies had relatively low levels of need and, therefore, there was

⁴⁸This was the model in the 1980s. It has changed somewhat with the advent of more managed care models in the 1990s.

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 residential care for home care. There were, however, other studies where clients had relatively high care needs, but in spite of this level of need, many such clients did not go into care facilities during the study period. This finding revealed an assumption which appears to underlie much of the research in continuing care, that is, that high care needs people only go into facilities, not into home care. To this writer, it appears that this was an important underlying assumption which affected the research design in the channeling studies. The prevalence of this assumption is also evident in the relatively large literature which tries to determine what factors lead to facility care. The results typically indicate that admission to a facility is predicted by enhanced age, living arrangements, and greater needs in regard to mental status, activities of daily living and instrumental activities of daily living. These findings are quite well-documented (Branch, 1984; Branch & Jette, 1982; Cohen, Tell & Wallack, 1986; Palmore, 1976; Shapiro & Tate, 1985) but they mask the reality that many high care needs people remain in the community.

As the previous chapter noted, a significant number of IC3 and EC clients were (and still are) cared for in the community in British Columbia. This issue of the proportion of high needs clients who are cared for in the community is important in terms of how one conceptualizes the nature of the problem cost-effectiveness analysis is supposed to address. If there is a lack of understanding about the proportions of high needs clients in the community, one would assume that there is a great deal of room for further efficiencies by introducing a home care program to provide alternative care in the community because all

high needs clients would normally go to residential care and the pool of people for whom one could substitute home care for residential care would be quite large. If it is clear that there have been, and continue to be, high needs clients who can be cared for in the community over the longer term, then the policy issue becomes one of how to selectively target individuals who would actually go into residential care. That is, one would need a policy rifle rather than a policy shotgun. However, to be fair, if one does not have a comparable care level classification system, one is less likely to know just how many high care needs home care clients there are and how they are similar and/or different from higher needs facility clients.

In the 1990s, managed care models become more prevalent in the United States. Some managed care models simply focus on reducing the amount paid to providers, while other models focus on overall management of a system of care. It is interesting and important to note that in the late 1980s, Arizona implemented a continuing care system with many features similar to the British Columbia model. William Weissert, who in the 1980s wrote many of the influential articles arguing that home care was not cost-effective, evaluated this question again in Arizona. He found that for the Arizona model, home care was a cost-effective alternative to residential care. Weissert's recent work (Weissert et al., 1997), when taken in conjunction with the findings from the South Carolina study and the On Lok study, begins to lend support to a hypothesis that the way service delivery systems are structured may have an impact on the cost-effectiveness of home care compared to residential care. A comparison of the market/insurance model of continuing care existing

in the United States in the 1980s and the managed care approach reflected in the British Columbia model is presented in Table 7-1.

One further matter to address in this section is the difference in the methods used in this study, compared to studies in the literature, to evaluate the cost-effectiveness of home care. Some of the channeling studies do make reference to previous work in the 1960s and 1970s where cost comparisons were made between home care and residential care. The authors of these older studies used a comparative cost analysis to argue that home care was less costly than facility care and, thus, concluded that home care should be expanded as an insured benefit under Medicare and Medicaid, the public insurance programs in the United States. Many of the subsequent studies, including the channeling studies, were designed to evaluate this line of argument and to correct the methodological deficiencies of these earlier studies. As noted above, it was concluded that providing greater insurance coverage for home care would constitute an add-on cost, rather than a saving to Medicare and Medicaid.

Thus, the earlier researchers in this area did not adequately address the issue of the actual substitution of home care for residential services. They simply concluded that home care costs less and, therefore, enhanced home care should become public policy. The critical distinction between this early work and the work in this study revolves around the issue of substitutability.

Increases in cost-effectiveness are a result of making adjustments in systems where care provision is less than perfect. There is no further room for cost-effectiveness based savings in a system which operates perfectly and where everyone who is in facility care can

Table: 7-1

Comparison of the American Market/Insurance Model of the 1980s and the Managed Care System in British Columbia

Factors	1980s American Model (Market/Insurance Model)	BC Continuing Care Model (Managed Care Model)
Role of Government	None, or operators of a public sector insurance scheme	Stewards of the provincial care delivery system
Management of the Care System	Market forces	Government management
Care Coordination	Potential to be fragmented	Potential to be integrated
Ability to Shape Care System	Low, reliance on market factors and incentives	High, ability to shape system through policy and management
Determination of Care to be Delivered	Individuals reacting to their own perceived requirements	Individuals and care providers
Guiding Hand	The "invisible hand" of the market	Government policy and administrative practices

only be cared for in a facility and where everyone in the community can be cared for by home care. Unlike earlier writers, the position of this writer is that savings from increased cost-effectiveness can only be realized to the extent that true substitutions can be made where clients who would otherwise be cared for in a facility are cared for at home. Is there any evidence that such cost-effective substitutions can be made in the real world? There is very little literature on this question. One of the few studies, and perhaps the only study to date, was conducted by this writer (Hollander, 1989; Hollander and Pallan, 1995) on a planning and resource allocation model designed for the whole system of continuing care. Given the

unique nature of this study, and its implications regarding the ability to substitute home care for residential care, an overview of the planning model which was developed is presented below.

The British Columbia Continuing Care Planning and Resource Allocation Model

In the summer of 1989, this writer developed a new planning and resource allocation model for the Continuing Care Division of the British Columbia Ministry of Health (Hollander, 1989; Hollander and Pallan, 1995). This model was unique in that it provided a framework for resource allocation across the whole continuum of care. Thus, it was different from most other planning and resource allocation models which focused only on residential care (future bed projections) or home care. The purpose of the model was to proactively reallocate resources from the residential sector to the community sector, that is, to substitute home care for residential care.

An extensive literature review was conducted of planning models, determinants of service utilization and service utilization ratios. It was found that, in 1989, British Columbia already had a relatively low bed to population ratio of 63 beds per 1,000 population 65 years of age or older compared to the other western provinces and to a number of industrialized countries. It was found that bed utilization ratios in the Scandinavian countries were very low. However, on more detailed inspection it was found that, for example, the sheltered housing systems in Norway and Sweden had many clients who appeared to be equivalent to the PC to IC2 clients in British Columbia. When these clients were included in the utilization ratios, overall bed utilization was higher than in British Columbia. Nevertheless,

the utilization ratios for the United States and the United Kingdom were some 54 beds per 1,000 population 65 years of age or older. Thus, there appeared to be room to reduce bed utilization in British Columbia.

To validate whether or not it would be possible, and safe, to care for a higher proportion of clients in the community, a survey of assessors/case managers was conducted to determine what proportion of clients could be safely moved from facility care back into the community, and what proportion of clients being streamed into facility care could be safely diverted and cared for in the community if additional resources were provided. The average estimates for these groups ranged from 6.8 percent for personal care to 2.4 percent for extended care for the proportion of clients who could be transferred from residential care back into the community and be cared for by home care. The corresponding percentages for the diversion of clients, at admission, from facility care to home care were 15.9 percent for PC clients and 6.0 percent for EC clients. It was determined that there was room for further efficiencies through a 10 percent to 15 percent reduction in the age and sex adjusted target utilization for residential care. A target of 55 beds per 1,000 population 65 years of age or older was set for the facility portion of the planning model.

The planning model which was developed had 12 age and sex cells based on two genders and the following age groups: 0-19, 20-44, 45-64, 65-74, 75-84, and 85+. It used the 1989/90 fiscal year as the base year for calculating utilization ratios for each age and sex cell. For facility beds, these ratios were then reduced on a pro-rated basis to equal 55 beds per 1,000 65 years of age or older from the existing 63 beds for the 1989/90 fiscal year. These 12 new ratios were then applied to subsequent years, up to 2011 to determine future

resource requirements for facility care. Modelling of cost and utilization projections revealed that if future funding streams, based on demographic changes, were applied to home care services, and facility beds were kept constant and only allowed to grow after they had been reduced to the 55 beds per 1,000 65 years or older level, home care services could be allowed to grow at 2-3 times the rate of age and sex adjusted growth (using the age and sex cells in the model) for a period of up to five years. It was projected that at the 4-5 year mark most health units would have reduced their bed utilization to the 55 beds per 1,000 65 years of age or older target and resources would again have to be provided to the residential sector to allow them to maintain the 55 bed target level. A policy decision was made not to reduce the existing number of beds but, rather, to reduce the utilization ratio by freezing the number of beds in health units⁴⁹ which were above the 55 bed target. Once the target was reached, resources would again be made available for expansion in the facility sector.

It was not possible to develop a specific target ratio for home care services, as was done for facility services, because there was relatively little literature on home care utilization, by type of service. Thus, the average utilization ratio for the province for the 1989/90 fiscal year was used as a base. This base was expanded by 2.5 times the age and sex adjusted increase in population for five years for each type of home care service. The resulting service utilization ratios were then reapplied to the 1989/90 population base to obtain the projected target ratios for each type of service. These target home care ratios were

⁴⁹In 1989 the geographic boundary for continuing care services was the health unit. While field staff reported through the hierarchy of the Continuing Care Division, they were co-located with public health and served the same geographic population.

then applied to each health unit. The existing utilization ratios and target ratios are presented in Table 7-2.

For purposes of calculating the resources to be allocated, health units would receive increased home care resources, as warranted, by a maximum of 2.5 times the age and sex adjusted population growth for up to five years, until they reached the target ratio.

This planning and resource allocation model was partly implemented in the 1989/90 fiscal year (an early version of the planning model was completed by September 1989) and remained in place to the end of the 1993/94 fiscal year. During the period it was in effect, it was fully integrated into the annual budget process to ensure that funds from Treasury Board for demographic changes were transferred from residential care to home care.⁵⁰

Figure 7-1 presents utilization data framed into four major periods in the history of continuing care services in British Columbia. The growth phase of facility construction came to an end in the 1983/84 fiscal year. The planning model came into play in the 1989/90 fiscal year and the termination of service for many lower care needs homemaker clients came into effect in the 1994/95 fiscal year.

It can be seen from Figure 7-1 that the effects of the policy that was in place during the mid-1980s to not increase facility beds had reached a plateau in the period 1987 to 1989 with annual utilization increases averaging about two clients per 1,000 population 65 years of age or older during this period. The policy of not increasing beds also served to provide a substitution of services as new resources were moved to home care.

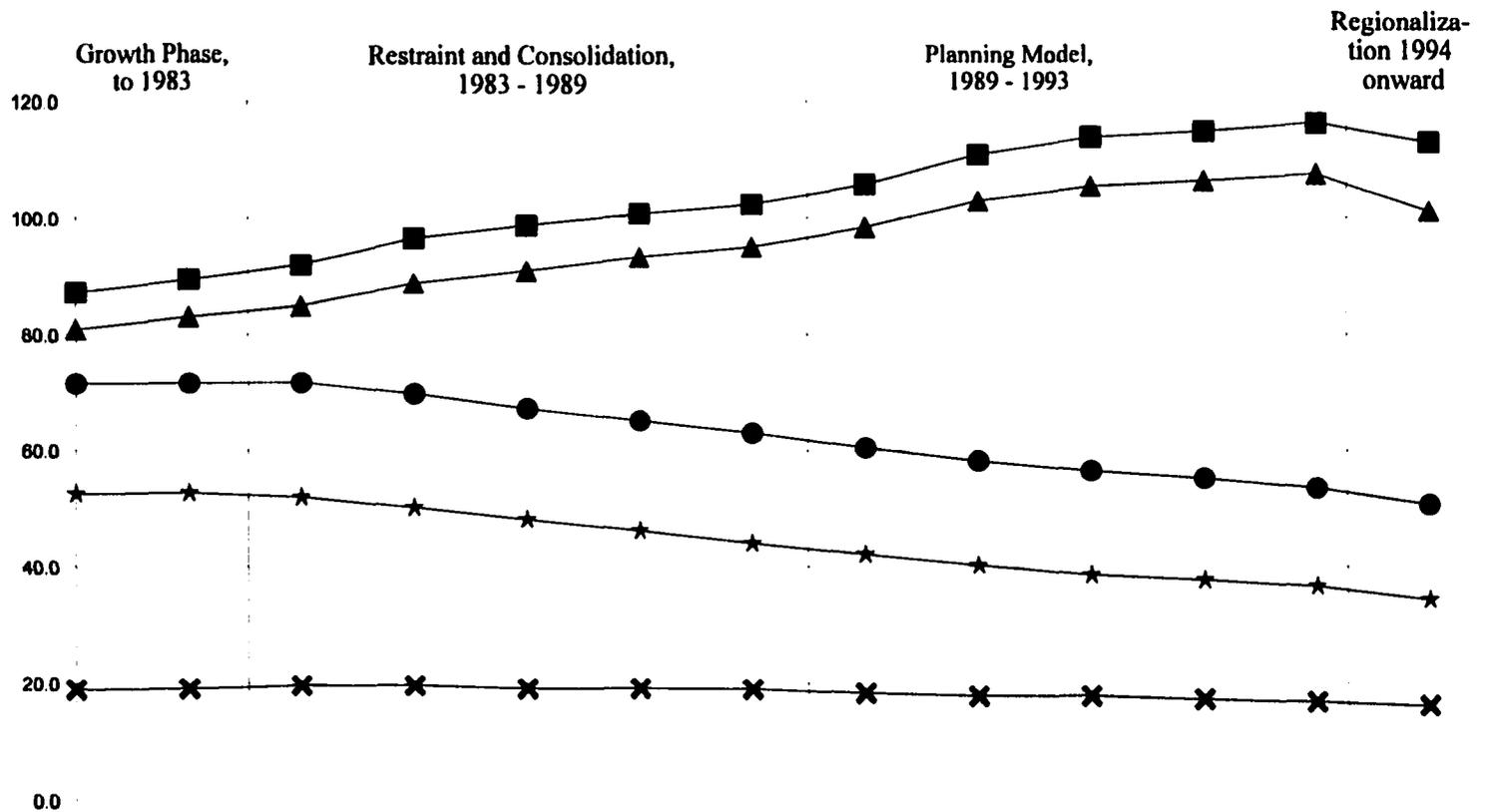
⁵⁰The planning and resource allocation model was discontinued in the 1994/95 fiscal year. This decision was part of a shift in the Ministry of Health to develop one new resource allocation model which would be used to determine budgets for the new health regions being developed in British Columbia.

Table: 7-2

A Comparison of Actual and Proposed Utilization Rates in Relation to the 1988/89 Base Year

Type of Service	1988/89 Actual Utilization Rates	Projected 1994/95 Target Rates Adjusted Back to the 1988/89 Population Base
Residential Care		
Long Term Care	44 beds/1000 65+	35 beds/1000 65+
Extended Care	19 beds/1000 65+	20 beds/1000 65+
Total Residential	63 beds/1000 65+	55 beds/1000 65+
Home and Community Care		
Homemaker Hours	1169 hours/1000 65+	1519 hours/1000 65+
Adult Day Care Days	25.3 days/1000 65+	33.1 days/1000 65+
Group Home Spaces	0.51 spaces/1000 65+	0.59 spaces/1000 65+
Full Time Equivalent (FTE) Clinical Services Staff	1.37 FTEs/1000 65+	1.76 FTEs/1000 65+
Full Time Equivalent (FTE) Assessor Staff	0.58 assrs/1000 65+	0.78 assrs/1000 65+

Source: Hollander and Pallan, 1995, p. 103.



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
■ Community	87.2	89.5	92	96.5	98.7	100.7	102.4	105.8	110.8	113.8	114.8	116.2	113
▲ Homemakers	80.9	83.1	84.9	88.7	90.9	93.3	95.1	98.4	103	105.5	106.5	107.6	101.2
● Residential	71.5	71.6	71.7	69.7	67.2	65.1	63	60.4	58.2	56.5	55.2	53.5	50.7
★ LTC Facilities	52.5	52.7	52	50.1	48.1	46.1	44	42.1	40.3	38.6	37.8	36.7	34.4
✕ EC Hospital	18.9	19.1	19.7	19.6	19.1	19.1	19	18.3	17.9	17.9	17.4	16.9	16.3

Utilization rates per 1,000 population aged 65 and over by fiscal year and type of care.

Fiscal year 1983 is for the period April 1, 1982 to March 31, 1983.

Figure 7-1: Major Phases in the Utilization of Home Care and Residential Care: 1983/84 to 1994/95

The growth rate of community services in the 1989/90 to 1993/94 period shows that further efficiencies were obtained, particularly in the early years of the planning model as growth rates average some four percent between 1989 and 1992. The actual shift in resources between home care and residential care can be seen by comparing the total utilization ratio for the 1993/94 fiscal year (169.7) with the ratio for the 1983/84 fiscal year (161.1). The total utilization remained about the same but there was a significant decrease in long term care bed utilization and an increase in home care utilization. The difference in overall utilization between the 1983/84 and 1993/94 fiscal years may be explained, in part, by the fact that in the 1983/84 fiscal year clients received more home care hours, by level of care, than they did in the 1993/94 fiscal year. Thus, more clients could be cared for, for the same number of hours per person in the 1993/94 fiscal year. Figure 7-1 also shows the effect of the policy to terminate lower care needs homemaker clients had on the utilization of home care services.

Figure 7-1 demonstrates that, at a systems level, it appears possible to substitute home care services for residential care services over time. This shift should, in turn, result in reduced overall costs for the system given the cost differentials in home care compared to residential care noted in the previous chapter. The shift brought about by the planning and resource allocation model was accomplished by reductions in the relative proportions of lower level care clients in facilities over time. The care level distribution of clients in the community remained relatively constant (Hollander, 1994).

The importance of the key features of the continuing care system in British Columbia during the 1983/84 to 1993/94 period are highlighted by this planning and resource allocation model. Use of one classification system allowed for an “apples to apples” comparison of home care and residential care clients. It was possible to do cost estimates, by level of care, in the modeling of the planning and resource allocation system under different scenarios of changes in the care level distribution of home care and residential care clients.

A single administrative structure allowed for efficiencies through the use of policy (no bed increase in the mid-1980s) and proactive strategic planning and management (use of the planning and resource allocation model). The potential benefits of evidence based and policy driven management have been highlighted in this overview. However, care systems can be managed well or they can be managed badly. To achieve cost-effective results, it is likely that one needs good systems and intelligent and proactive management. The discussion of what constitutes good management is beyond the scope of this study. However, based on the above discussion, it appears that there may be some advantages to the way continuing care services were organized in British Columbia during the 1983/84 to 1993/94 period.

In concluding this section, it should be noted that the data provided seem to indicate that different conditions were in play in regard to care delivery in British Columbia and the care delivery in the United States as studied by Weissert. The findings of this study are contrasted with Weissert’s seven reasons for why home care may not be cost-effective in Table 7-3.

Table: 7-3

Comparing Weissert's Seven Reasons Why it is so Hard to Make Community Care Cost-Effective to the British Columbia Experience

Weissert's Seven Reasons	The British Columbia Experience
1. Community care is an add-on to other services and is not a substitute for residential care.	Community care demonstrated to substitute for residential care over time.
2. 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.	Almost all people who are admitted to a facility remain there.
3. Community care has not reduced the rates of institutionalization.	Utilization rates for institutions have been reduced. For example, the bed to population ratio for those 65 years of age or older went from 71.6 beds per 1,000 population 65 years of age or older in fiscal 1983/84 to 58.2 beds in fiscal 1991/92.
4. Patients at high risk are hard to find because they are relatively low in number.	Care finding is not an issue and people who need care can generally find it easily.
5. Screening and assessment costs are high.	Costs are moderate to low.
6. Because most community services are small, unit costs are relatively high, due to overhead costs, particularly when all service slots are not filled.	There are higher overhead costs for smaller agencies but many small communities can only support one agency. There is no room for increased efficiencies in such cases.
7. There is limited effectiveness in improving health status.	True, this is a characteristic of a <u>care</u> based system such as continuing care.

Source: The seven reasons are from Weissert (1985), while the British Columbia experience is from this study.

Implications of the Study Findings for Future Research

This study has highlighted a number of key issues for researchers and analysts. The importance of a consistent client classification system across home care and residential care has been clearly identified. Any attempt to compare the relative costs of home care and residential care, without controlling for care level, is likely to produce misleading results. Similarly, a consistent care level classification system is critical for the development of system-wide planning and resource allocation models.

Another important finding relates to the high frequency of reassessment in the system of care which reflects a high degree of change in client status. This means that any studies which assess client characteristics at assessment, or at the point of first care provision, and try to link these characteristics to care over any extended period of time may provide misleading results. If the purpose is to see what happens to clients over time, this may not be a problem, but how relevant are the results when the status of clients may undergo significant change during the study? If one is doing cost comparisons, cost-effectiveness analysis or looking at client characteristics and relating them to service utilization, one is faced with the fact that a significant proportion of clients will change and their characteristics will no longer be the same as they were at the baseline. Depending on the objective of the study, it may be necessary to collect data at every important change point, or at least on a fairly regular basis, when doing research in this area. Furthermore, the generalizability of findings may be affected by the relative ratio of clients who change (and how often they change) their type and/or level of care versus those who remain relatively stable. For studies where the rate of change may be an issue, change rates should at least be reported.

The above is even more true for death rates. While some channeling studies address this issue, current research does not appear to sufficiently address this matter. As noted in this study, the costs to government for home care clients who were relatively stable were significantly less than for residential care clients. However, for those who died, the costs were higher for home care clients compared to residential care clients. Thus, the relative proportion of clients who die, over given time periods, can have a significant impact on the relative costs of home care versus residential care clients. This topic should be addressed in future costing studies. Doing subanalyses, or adopting a FTE client approach as was done in this study, may be two useful ways of addressing this issue.

CHAPTER 8

CONCLUSIONS AND FUTURE POLICY AGENDAS

Introduction

This chapter presents a series of policy agendas designed to stimulate discussion of important policy issues and to identify some of the key questions, principles and philosophical issues which will need to be addressed by policy makers, and others, as they deal with policy issues related to continuing care. The following section deals with perhaps the most important agenda to be addressed, that of examining how continuing care fits into the emerging model of structuring the delivery of health services in Canada. Organizational structure is important because it is often reflective of other issues such as how services are delivered, how they are integrated with other services, what care philosophy predominates, what information is collected and a host of other important matters which affect the efficiency and effectiveness of service delivery. Other policy agendas relate to legislation and administrative policy, service delivery, resource allocation, information systems, and research.

A Policy Agenda for Organizing and Managing Continuing Care Services

This writer has worked in the continuing care field for 15 years and, based on the results of this study and previous work, is reasonably convinced that the way the continuing

care system has been organized in British Columbia has some merit. Many international visitors who have studied the BC system also consider it to have merit. Most other Canadian jurisdictions have now also moved to having single entry, standardized assessment and case management. This coupled with a single administration and the same care level classification system for home care and residential care appear to result in a reasonably effective system. A number of these characteristics are also mentioned by other writers, including Weissert, as conditions which may lead to the cost-effectiveness of home care services. The benefits of these five characteristics are presented below.

- **Single Entry**

Single entry provides a consistent screening mechanism which ensures that only those with appropriate needs are provided services. This increases overall systems efficiencies because it minimizes the probability that unnecessary care may be provided. In addition, single entry provides a focal point, in local communities, for “one stop shopping” for care services. This means that individuals do not have to speak to multiple sources to find out what services are available, and how they can be accessed. This increases the level of accessibility to the care system. In systems without single entry, people may not obtain care, or the most appropriate care, because of a lack of knowledge about what is available to them. Client entry is to a whole system of care, and not just to part of the system such as home care. Thus, there is a comprehensive range of services which are offered in the system of care.

- **Coordinated, System-Level Assessment and Placement**

Coordinated assessment and placement at the system level ensures that there is an appropriate determination of need, and that an initial care plan is developed which is most closely suited to the needs of the client. This care plan constitutes a statement of the range and approximate volume of services to be delivered by one or more types of service providers. There may be further clinical assessment and case management activities which are carried out within the agency providing actual hands-on care to the client. Based on this care plan, the client is “placed,” that is, provided access to care in any of the components of the service delivery system whether these services are provided in institutions, the community or the client’s own

home. Coordinated assessment and placement increases systems efficiencies because, during this process, consideration is given to whether or not clients can be cared for in the community, as opposed to a facility. In most cases, community based care is less expensive. The system level assessment and placement process maximizes the probability that the most appropriate services are provided based on the needs of the client. Another positive feature is that the management of facility waiting lists by the assessors/case managers stops facilities from selecting the easiest to manage, or lower cost clients, sometimes referred to as “cream skimming.” Finally, coordinated assessment allows for the collection of the same information for residential and community based clients on admission to the overall system of care.

- **Coordinated, Ongoing, System-Level Case Management**

Coordinated, system-level case management ensures that there is regular monitoring and review of client needs and that, as needs change, care plans are adjusted to ensure that there is a continuing match between the needs of the client and the range of care services provided. This increases systems efficiencies by not allowing clients to deteriorate, from lack of regular monitoring, to the point where more costly services such as admission to an acute care hospital may be required.

- **A Single, System-Level, Administrative and Funding Structure**

A single administration for a system of health care services has several positive aspects. Government funds, and funds within regional health boards, can typically be more readily transferred between residential and community based services to maximize system efficiencies if they are in one division than if they are split between two divisions or two ministries. Similarly, at a policy level, a single administration maximizes the probability that policy issues are viewed in the context of the total continuing care system, not just one sector, such as the residential sector or the community sector. At the clinical level, a single administration maximizes the probability that care staff have a sense of the overall continuing care system, the roles that each of the service components play in the system, and, therefore, how the needs of the client can best be met within the system. At a planning level, a single administration ensures that planning and resource allocation can be done on an overall systems basis, rather than on a component by component basis.

- **A Consistent, System-Level, Client Classification System**

A consistent client classification system allows for the comparison of clients across service delivery components, by level of care, that is, an “apples to apples” comparison. This, in turn, allows analysts to determine the extent to which greater efficiencies may be possible, for example, to what extent clients who could be treated at less cost in the community are being admitted to residential care. It should be

noted, however, that while community based care is typically less expensive, within each level of care, this may not always be the case. There were a few examples of home based clients in the BC system in the 1980s whose costs equalled or exceeded the costs of facility care. They continued to be treated in the community on an “exception” basis.

Without being able to compare levels of care, it is not readily possible to determine the extent to which similar types of clients are served across service components. Without this knowledge, one cannot easily plan for an efficient and effective mix of services on a system-wide basis. For example, if all community and home based clients are at low levels of care and all facility clients are at high levels, providing more resources to community services, and reducing beds, may only result in having more clients at low levels of care in the community while depriving those with high care needs of the facility based care they require. Conversely, if a significant proportion of community based clients are at higher levels of care, and a proportion of facility clients are at lower levels of care, the system may be capable of greater efficiencies because community and home based services have demonstrated their capacity to care for people who may be at an equivalent level of need as those in facility care. Without having comparable care levels, this type of analysis is much more difficult.

Until recently, home care and continuing care lived for most of the 1990s in a type of policy purgatory, relegated to inattention due to “other priorities.” Given the size and scope of continuing care, it surely merits additional attention by decision makers. Two crucial questions, from which much else will flow, are how this sector is to be structured and how it fits into the way health services will be organized in Canada in the future.

Decision makers who may wish to make evidence based decisions regarding improvements to the care of the elderly should be aware that the type of analysis presented in this study can not be replicated, or can only be replicated with considerable difficulty, in most jurisdictions in Canada. This is because most jurisdictions do not have the same classification system for home care and facility care clients, which is needed to make comparisons. In addition, there are some areas of analysis in this study which could be

bolstered with further improvements to the way the continuing care system is conceptualized and structured.

This discussion is not simply about reducing costs. More seamless and integrated services are also of benefit to clients. Thus, to improve both the cost and quality of care, and the ability to make more evidence based decisions, senior decision makers should consider taking the following steps:

- Recognize and validate the conceptual model of continuing care and the five key characteristics of the care system noted above.
- Move to adopt a client classification system that is the same for home and community based long term care and residential long term care in each jurisdiction and, ideally, across Canada.
- Move to integrate, as much as possible, chronic care beds into the long term care residential sector (particularly in British Columbia and Ontario) and to change the reporting relationship from one of submitting hospital abstracts and hospital MIS data to one of submitting data from utilization, financial and other reporting systems in long term care.
- Integrate the collection of service utilization data, and financial data, into the information systems in continuing care which currently focus primarily on assessment data.
- Consider ways to elevate the role of continuing care in the Federal/Provincial/Territorial Advisory Committee structure. The new F/P/T Working Group on Continuing Care is a good first step in this direction.

Home care, a current priority area, is not an island unto itself. It is, and will be, part of some larger aggregation of services, but which aggregation? The British Columbia model of organizing continuing care services has several benefits. Structurally it is a vertically integrated system of service delivery with a broad range of community services at its base.

The system is client centered and fully integrated horizontally (that is, across community services) and vertically (between community and institutional services) through the coordinating activities of the assessors/case managers. It also has coordinating linkages to other parts of the health care system.

Currently, inadequate attention is being paid by decision makers to different models of how to organize and structure the delivery of health services in Canada. While there is a focus on primary care, and this is certainly an important area, one needs to consider what this means. Will we divide health services into institutional care and primary care (that is, all community based care) and move the residential parts of continuing care to institutional care and the community parts to primary care? Doing so could jeopardize the seamlessness of the current system, particularly in regard to the flow of clients between community services and residential services. Is there room for a third option to co-exist with these other models, that is, a vertically integrated community care model? The model described for continuing care in this study could also apply to other services such as those related to mental health, alcohol and drugs, and children with disabilities as they are generally systems of care which have community, residential and acute components, that is, they are also both vertically and horizontally integrated.

The way continuing care services are now organized should be actively discussed in relation to other models. Considerable benefits may be obtained from an improved primary care system. How can the benefits of primary care and continuing care be maximized? Is a matrix model of acute care, primary care and continuing care possible? The question of

how service delivery for the elderly and the disabled can best be organized should be on the policy agenda of decision makers at the national, provincial and regional levels.

There is some urgency to this proposed review of continuing care as it has, as an entity and as a concept, been neglected for most of the 1990s. Continuing care appears to be losing its language (terminology is changing under regionalization), its culture (it is being “integrated” with other services), its administrative leadership (few of the people who were in leadership positions in government in 1993 are still in such positions) and its intellectual leadership (some of the key thinkers in this area are about to retire). It is important for decision makers to consider the benefits of what we already have and not, perhaps unwittingly, or even with the best of intentions, to make the system worse. This is the policy equivalent of the medical maxim to “do no harm.”

To those who would say that the above presents an overly gloomy scenario there are examples of other excellent programs which have simply withered away such as those noted in the mental health sector by Torrey (1990). Torrey presents four case studies of successful programs in which there was considerable service integration and coordination. In each of these four cases, there was clear evidence of success but there was little replication of these projects and the projects themselves eventually were allowed to “wither and die.” Torrey (1990) contends that the uncoordinated nature of the various funding systems inhibits the maintenance and expansion of innovative service models and that funding models favour hospitalization rather than community care. “Turf” issues were also seen to be at play. In a project with collaboration between public mental health services and a university, Torrey (1990) notes “... the county effectively abolished a proven program in order to retain

autonomy from the state-funded university system” (p. 529). He concludes by stating “Demonstration programs can demonstrate and model programs can model, but if their design, however praiseworthy, is contrary to the existing system of economic incentives, then such programs will be neither extended nor replicated” (Torrey, 1990, p. 530). The same may be true of systems of service delivery which do not conform to current conceptions of how service delivery should be structured and organized.

In fairness, efforts to more fully integrate a wide range of health services are ongoing across Canada, particularly at the regional level. It may well be that new and emerging models are being developed. There are currently examples of innovation in many parts of Canada. However, the point of this commentary is that there is a need to open up the policy windows, let in some fresh air, and have a good discussion about what makes sense about how health services are organized and what does not, and why. Those in need of the services of our health care system and our funders, the taxpayers of Canada, should expect no less.

A Policy Agenda for Legislative and Administrative Policy

A second major policy area which requires attention relates to legislation and administrative policy. Currently, for example, a variety of policies exist about who pays for what and how much they pay. The public-private split in regard to the payment for services is very much an issue in continuing care. With the advent of the Canada Health and Social Transfer, provincial and territorial governments have a clean slate about what they can and cannot do with regard to user fees for continuing care services. User fees currently vary across Canada but generally there are no, or low, fees for home care services provided by

health professionals such as nurses. There are generally fees for home support, and at certain levels of income, users may have to pay the full cost of homemaker services. There are also anomalies in regard to user fees for long term care facilities. Policy makers may wish to consider if this is appropriate and should continue or whether a review is warranted.

Any reviews of user fees and other important issues in continuing care should first address which principles should apply to continuing care. Due to the historical evolution of this sector there are two strong but competing principles imbedded within continuing care. They are contained in the residual welfare model (from social services) and the universal model (from health care). An example of the tension between the residual welfare model and the model of universality relates to user fees, or the lack of fees, for the services of different types of home care providers. One needs to consider if there is a logic which would continue to allow for differential user fees, in home care, for the use of health professionals such as nurses compared to social support workers such as homemakers. It may be logical to argue that professional services are more clearly “health” services and due to the historical, universal coverage for hospital and medical services, health related services should have a greater subsidy because “social” services have historically been income and/or means tested. On the other hand, there is evidence (Hollander, 1997a, 1997b) that seniors value the social service components of continuing care as much or more than the health components. Also, one must consider that most clients in continuing care receive a mix of services from health professionals and social support workers. Does it make sense to continue to have a distinction in terms of user fees when both services are needed and serve to support each other? Which principle should prevail and to what degree?

The issue of whether or not home care and/or long term care services should become universal services is also reflected in two other issues which should be considered by policy makers. One is the anomaly of home care clients receiving drugs for free in the hospital but having to pay for them once they are discharged and receive care at home. The other is the significant disparity in user fees for residential long term care services across Canada. While jurisdictions from Québec to the Pacific coast charge a user fee, it is usually fairly modest and can be seen to represent the “hotel” portion of costs. In Atlantic Canada, clients may have to pay up to the full cost of care. This anomaly again demonstrates the tension between the universal coverage model applied to health services and the residual welfare model of social services noted previously. Is it right that someone who moves from British Columbia to Atlantic Canada may have to pay three or more times as much for the same type of residential care as that person would pay if he or she remained in British Columbia? Is it right that people may have to pay privately for residential care in British Columbia while they wait out their one year residential eligibility because this service is not portable across jurisdictions?

Policy makers will also need to consider the appropriate role of the state versus the individual in paying for needed services. For example, reductions in hospital lengths of stay may have resulted in people being discharged “quicker and sicker,” with the result that there may be greater costs to individuals and their families. This issue also relates to the home care versus residential care model in that increasingly, only high care needs individuals (for example, IC3 and EC type clients) are admitted to facilities (Hollander, 1994). This may also result in increased fiscal and time pressures on family members.

To the extent that policy choices may be made to increase government funding to home care, and to increase user fees for facility care, the differential in costs to government, by level of care, between home care and residential care will diminish. In fact, home care may become considerably more costly, for government, for more wealthy clients if in the extreme case home care costs (for example, the costs of home nursing care) are paid for by government, and facility costs are paid for by individuals (because they are means tested up to the full cost of care). Thus, policy makers will need to consider not only what to do about user fees for home care, but also, the relative equity and justice between home care and residential care.

A policy issue which relates to the above and to the previous section on the organization and management of continuing care services is that potential savings may be obtained from using long term care facility beds (including chronic care or extended care beds) as a substitute for acute care beds. While the focus of this study has been on the comparative costs of home care versus residential care, one could not help but notice the significantly greater drop in costs for residential clients before and after a client's admission to residential care. Much of the drop in costs was due to the differential costs of hospital services before and after admission. While the recent emphasis on home care has been gratifying to the people in this field, it may be that a major area of inquiry, that is, the cost-effectiveness of long term care compared to acute care services, may have been overlooked due to the recent focus on home care rather than on the larger system (continuing care) of which home care is an integral part. This point, again, highlights the need for policy makers to think about how the health care system should be structured.

If one believes that the above anomalies in our health system should be addressed then how could this best be done? It seems unlikely that home care can come under the *Canada Health Act* due to the problem of defining basic supportive services as being medically necessary. Other options, however, could be considered. For example, the EHCS portion of the Act could perhaps be reworked to include some of the same benefits without the need for medical necessity. A parallel Act could be passed which would provide for financial coverage of certain approved programs. This matter could also be dealt with through administrative regulations or reciprocal federal/provincial and/or interprovincial agreements.

This discussion raises the question of how fiscal, regulatory and legislative matters should be addressed in a post-CHST world, or how they should be restructured if the CHST is maintained. There are clear anomalies, and some may say injustices, in the way current arrangements are structured due to the historical evolution of continuing care and the inherent tension between the residual welfare model and the universal health care model. While the CHST maximizes flexibility, it provides fewer standards for the protection of those in need than was the case under CAP. In addition, while there is flexibility within a jurisdiction, the CHST may not be the ideal structure, as it stands, to address cross-jurisdictional issues. It may be useful for decision makers to consider taking the following steps, perhaps within a framework of Social Union discussions:

- Moving all continuing care services into a universal, or modified universal, model of coverage. It may for example, still be appropriate to charge user fees for the room and board portion of residential care because people are generally responsible for their own room and board charges but all other services such as nursing, care aids

and so on should be paid for by government. It may also be possible to charge some form of fee for very wealthy individuals for the general household activities of homemakers, such as dusting, as this has both a preventive health benefit and a benefit to individuals as it is something individuals are usually responsible for themselves.

- Providing funding and making appropriate regulatory and/or legislative changes to ensure the portability of continuing care services across Canada. Currently, most jurisdictions have some type of waiting period for both residential and community based long term care services. Many families are currently burdened with the necessity of paying privately for the care of their aged parent if they wish to bring them to the jurisdiction in which the son or daughter is living. While residential eligibility periods differ across the country, a one year residency requirement is not uncommon. One year of care in a long term care facility, particularly for a high needs client is expensive and may constitute a significant financial hardship, particularly for lower and middle income families.
- Providing funding, as required, to redress the current anomaly of clients obtaining drugs for free in the hospital and having to pay for the same drugs in the community. It should be possible to establish methods of subsidizing drug costs for individuals in the community with a clearly identified need, as determined by an appropriate health professional.
- Bringing in additional services such as dental care and eyeglasses into the list of services provided under a universal model of continuing care.
- Determining, at a future date when better data have been obtained, the extent to which individual family members should be assisted in their efforts to care for their loved ones who suffer from functional deficits. What level of burden is appropriate for family members and at what point should government lend a hand to those in need?

If it is decided that it is not possible, feasible or desirable to make changes, such as those noted above, then decision makers may wish to consider the extent to which they have an obligation to inform the public about the realities of the financial risks they may face with regard to the care of the elderly and disabled so that these people can consider the extent to

which they need to protect themselves from financial hardship through the private market for insurance or through not-for-profit cooperative insurance plans.

Some form of universal coverage, or enhanced coverage, of the costs of continuing care services would no doubt be of benefit to care recipients. Many elderly persons in Canada survive on Old Age Security and the Guaranteed Income Supplement (OAS/GIS). There is not a lot of money left over to pay for drugs, eye glasses, dentures, cleaning services, taxis or buses (for those who can no longer drive) let alone the small pleasures of life such as a movie or a meal in a restaurant, after one pays for food, clothing and shelter out of their OAS/GIS cheque. What is *medical necessity*? Can it differ with age and disability? What about the current focus on population health and preventive health which defines *health* quite broadly. The matter of whether or not, and if so how, to provide increased health coverage for the elderly will bring policy makers, those needing care, other groups which are also disadvantaged, and the public face to face with the larger philosophical issues of the role of the state versus the role of the individual, the universal model of coverage versus the residual welfare model, the relative need for societal support by different worthy groups, and fundamentally, what kind of society we wish to have, that is, what it means to be a Canadian.

A Policy Agenda for Service Delivery

The challenge to those responsible for service delivery will be to consider how to develop targeted services that can increase the effectiveness of the overall service delivery system. The development of programs to support people in the community so they can avoid hospitalization may be a worthy priority. How would such programs be structured and which

types of individuals would constitute the “early warning system” to flag people who may be heading into a crisis? Would basic things such as putting in handrails and wheelchair ramps be helpful as preventive measures? What part of the budget would they come from? What are the relative merits from a cost perspective and from a client care perspective of enhanced home care versus 24 hour health clinics? How would people learn that enhanced services are available? These are all challenges for service providers. Establishing appropriate and targeted palliative care services in the community presents similar challenges.

There is also the challenge of looking at clinical policy, and the impact of administrative policy, in regard to the effectiveness of care provision. Are there financial, policy or administrative blockages to care provision? If so, how can these be overcome to ensure the best and most cost-effective care for the client? Clinicians also need to have input into larger policy questions such as caps on resource utilization and larger philosophical questions such as to what degree, and under what conditions, it is appropriate to maintain individuals in the community at costs greater than that for facility care. This issue again revolves around policy choices regarding the relative roles of the state and the individual. If health care is a right, what is it a right to? Under what conditions do individuals have a right to care in the community? Clinicians need to become more involved in these larger policy issues because they deal directly with clients and have to deal with the fallout of fiscal and administrative policies currently set by others. An example of this is the finding in recent work (Hollander 1997a, 1997b) that seniors only want services that are sufficient to their needs. Such services may be less than what is currently provided. While this finding needs to be verified, there may be room for further efficiencies. Savings from such

efficiencies could, and should, be reinvested to support people who actually need more care than they are receiving.

Issues of clinical policy are affected by our basic philosophical perspectives of the rights of individuals. To what extent, and for what additional amounts of resources, can one provide more culturally appropriate meals? To what extent can there be greater flexibility about when people in a facility can eat, when they can get up, and other matters of individual liberty? Do individuals have the right to be idiosyncratic when they are in care? How can care be more humane and respectful of individual rights and differences? It is much easier to “process” clients and “follow procedures” than to do the hard work of ensuring human dignity. This discussion is not to say that care is not excellent, or at least good. It is, rather, a reminder to both clinicians and administrators to more actively pursue client focused clinical and administrative policy.

A Policy Agenda for Resource Allocation

There are many good arguments for increasing funding to home care to enable care staff to provide more appropriate care and to reduce the financial burden of family members, even if such action may represent an overall increase in funding. However, a fundamental lesson from this study is that simply adding money to home care and long term care services will probably not produce cost-effective results or desired policy goals.

If, and when, a decision is made to provide more resources to this sector, a number of issues will need to be considered. Policy makers will need to clearly think through the extent to which new funding will be allocated for overall improvements in services compared

to specific, targeted programs which may increase cost-effectiveness. Money is likely required for both types of purposes. They will also need to consider what proportions of possible new funds for home care will go to the preventive and maintenance model of home care, the long term care substitution model, and the acute care substitution model and, for each area, what type of innovative strategies will produce the greatest efficiencies. Confusing a preventive strategy and a substitutive strategy may lead to suboptimal results. Innovative programs which serve to substitute home care for residential care or acute care need to be developed and tested before they are implemented.

Policy makers will also need to determine how new funds are to be targeted. Do they wish to increase salaries for homemakers to the level of care aids in long term care facilities to correct what some perceive to be a relative bias in compensation favouring institutions over home care? Do they wish to provide salary enhancements to other categories of workers such as nurses and administrators? Do they wish to provide more service per client because it can be argued that many clients need more service? Do they wish to use funds to compensate for funding cuts to lower level home care clients? Do they wish to provide services to more people and reduce or eliminate waiting lists for home and community based services such as adult day care? Do they wish to do all of the above, and if so, in what relative proportions?

While it is not possible to provide answers solely from the findings in this study, policy makers may wish to consider the extent to which further efficiencies through substitution are possible and the extent to which the restraint of the 1990s has already resulted in close to maximum efficiencies. Is there still room for further substitution or is

there a clear need for an infusion of new money into home care? How low can one go in terms of beds per 1,000 65 years of age or older? Were the recent decisions in Québec and Ontario to increase the number of long term care beds due to having reached maximal substitution or, were the pressures which brought about these decisions due to a lack of appropriate planning and resource allocation models?

The easy savings, and even some of the moderately difficult savings, may have already been achieved given the significant reductions in the length of stay in hospitals and the reduction in long term care beds across Canada. Further efficiencies may well be possible, and may be substantial, but they will mostly likely require a fairly high level of administrative and program excellence to achieve. This suggests that there may be a greater need than ever for strategic, evidence based management. As is discussed in the next section, there is an urgent need for a national database on continuing care. Many of the questions noted above will require a baseline of data that allows comparison across jurisdictions, along a series of common key indicators. Such a database could also be used to flag particularly efficient systems or services which could be used as examples for others in terms of how to achieve greater efficiency and effectiveness in the delivery of home care services.

There is some urgency and an opportunity, to put into place a process for obtaining needed information to support evidence based decision making in regard to continuing care services. Baby boomers are aging. Eventually, there will be a significant demand for continuing care services. In addition to the coming demand for services, baby boomers are likely to be much more questioning and “difficult” to deal with than the current elderly.

They will insist on their rights, question clinical judgement, question why they cannot have additional services if they can pay for them, and question why their needs for service are not being more actively addressed by government. These potential changes in clientele may well have important implications for both funding and clinical practice.

There is still ample time to try to deal with these issues because the real increase in the utilization of health services starts to escalate after people reach about 70 to 80 years of age. Thus, we have about seventeen years to try to get it right before the leading edge of baby boomers turns 70 in 2016. This should be long enough if we start to develop programs and policies for the future now. It is not nearly enough time if we are mired in inaction.

A Policy Agenda for Information Systems

One of the glaring shortcomings, from a national perspective, is the lack of a national database on home care. This matter is apparently being addressed by the Canadian Institute for Health Information. It is a matter which should be resolved as soon as possible. To not have basic data on what may soon be a publicly funded, three billion dollar industry should be a matter of serious concern.

There is also considerable room for improvement in regard to national data on long term care facilities. In some jurisdictions, such as British Columbia and Ontario, extended care beds are still in the hospital sector for reporting purposes and, therefore, comparable data do not exist for all extended care level facility clients because some institutions report on Statistics Canada's Survey of Residential Care Facilities while others report through the

hospital abstracts. This lack of comparability was a major limitation to accurately costing residential services for extended care level long term care clients in this study.

Another important area for policy makers to consider is what is an appropriate strategy for the development of health information systems. It appears at present that the policy of choice is large-scale, long-range mega projects. While this may be appropriate and may yield benefits in future years, this writer is of the view that policy makers may also wish to balance such mega projects with some short term projects which will yield tangible results.

In 1993, this writer conducted a study to determine the feasibility of developing a national database on continuing care. Contrary to the expectation that there would be little data, and that what there was would not be particularly useful, he found that a great deal of data was being collected which could indeed be quite useful. However, much of the information was not being entered into a computerized database, and little analysis, aside from that required to meet administrative and operational concerns, was being conducted on the data. While it was good that operational and clinical matters were being addressed, it seemed that the non-use of this information as an input into administrative and clinical decision making was a significant missed opportunity.

As evidenced by this study, one can do a great deal that may be useful to policy makers simply by using data which already exist. Thus, the policy choice is to determine how to most effectively allocate information systems resources, particularly after the resolution of the potential Y2K problem. High status in the systems field appears to be in systems development, and little status appears to be in systems maintenance and analysis. Problems related to a lack of information integration are often cited as reasons for developing

new, cutting edge systems. These problems are real but does the excellent have to drive out or delay the good? So much could be done by computerizing existing data and developing better mechanisms to link data sets. In addition, more could be done to ensure data quality. To make the most of what we already have, we need to analyze existing data and feed it back to administrators and clinicians. Once they become engaged in a dialogue about what the data mean, whether or not they are accurate, and how they can be used to inform policy, a much greater value will be placed on data and more effort will be expended to ensure that it is valid and reliable.

We do not have to wait five or ten years to have the data required for evidence based decision making. While we may have to wait for some things, many issues can be addressed quite adequately right now if we computerize existing data, link relevant data bases for analytical purposes, and analyse them. Some jurisdictions have entered into major systems initiatives even though little, or none, of their home care data is computerized. Alberta developed a leading edge assessment and placement instrument in the late 1980s. It fell into disrepute in the 1990s because clinicians could not get data from the system since the data were not computerized. This unfortunate lack of priority on the use of existing data results in lost opportunities to provide better care to those in need through the use of good clinical information, and to provide decision makers with relevant input into their decisions.

A Policy Agenda for Improving Cost-Effectiveness Research in Continuing Care

Most of the current methodological development in health related economic analysis focuses on drug trials or the evaluation of specific, time limited interventions, using some

variation of a randomized clinical trial or experimental or quasi-experimental design. Continuing care is a care based model rather than a cure based model. Care is ongoing over time and, thus, different methodological approaches may be required. In addition, many of the basic tools such as discounting future costs and benefits and calculating quality adjusted life years may not apply very well to an elderly population where the average age of those in care may well be over 80 years and the methodology may only apply to people up to 75 years of age.

There are many tools in the economic evaluation tool kit. One needs to determine which tools can be used off the shelf, which tools need to be modified, and how, and which new tools will need to be developed to properly conduct economic evaluations in the continuing care sector. An important first step could be the development of a textbook explaining current approaches, how they can be used in continuing care related studies, and their relative strengths and weaknesses for use in this sector.

It would be most useful to conduct a more detailed study of how continuing care services are organized across Canada and the costs and utilization of services, for each type of service (and to the extent possible for each level of care). This would provide a comparative baseline and normative standard for the delivery of continuing care services and would begin to provide decision makers with the information they will need to address the policy and program issues raised in this chapter. It would be ideal to go further and also do comparisons with a number of other OECD countries.

Developing comprehensive cost lists of home care and residential care services in each province and territory of Canada would be another area worthy of investigation. This

would greatly facilitate the comparative analysis of costs across jurisdictions. This could be part of, or a parallel initiative to, the development of a national database. Unit costs could be merged with basic utilization data to quickly and easily obtain cost estimates for continuing care services. In addition, unit costs calculated annually would allow for a clean estimate, controlling for the relative contribution of inflation, of differences in wage rates, differences in service complexity, and differences in the amount of services provided.

The development and adoption across Canada of a comprehensive system level classification system is also very important. As was seen in Chapter 5, costs and utilization vary significantly by level of care. There is considerable room for improvement in this area and the province of Alberta is currently testing a possible classification system that may be useful nationally. It would be highly desirable to be able to consistently classify clients across Canada and to have the classification system be part of a national database on continuing care. Similarly, it would be desirable to have separate unit costs, by level of care, in any cost list which may be developed. These two steps would allow decision makers to compare costs, for similar types of clients, for the full range of continuing care services, across jurisdictions.

The above suggestions would go a long way to provide Canadian decision makers with the information they require to make evidence based decisions. Research is, however, also needed into issues around implementation, an area which is often neglected. Studies are required about the policy, administrative, clinical, and other factors which currently impede the realization of maximally effective systems of care. Studies are particularly needed on the hospital to home care interface. Finally, there is need for research on the relative

effectiveness of different models of service delivery. Key indicators need to be developed for evaluating the relative efficiency and effectiveness of continuing care systems of service delivery. These indicators can then be applied to different systems to analyze different care models in order to assess their relative strengths and weaknesses.

Concluding Comments

This study has shown that, given appropriate substitution, home care services can be a cost-effective alternative for residential long term care services. The study has also shown that home care is not more cost-effective under all conditions as costs appear to be greater for clients who die. This is a new and important finding, as are the findings that approximately one half of the health costs for home care clients are related to their use of hospital services, and that a significant portion of the costs for home care clients are incurred at transition points.

Given the challenge of providing care for an increasingly elderly population over the coming years, it is hoped that the findings from this study will provide new opportunities to develop more efficient and effective systems of care provision. Developing targeted efforts at substituting home care for facility care, developing programs to reduce the use of hospitals by home care clients, developing community based palliative care for the elderly, and developing programs to provide quick, appropriate and effective care to re-stabilize clients at transition points, all appear to have promise in improving the efficiency and effectiveness of home care services. Such efforts should be the beginning of a series of new, innovative,

and evidence based initiatives which will assist us all in dealing with the challenges of caring for the elderly and disabled in a sensitive, caring and cost-effective manner.

APPENDIX A

AN OVERVIEW OF ECONOMIC ANALYSIS AND ITS APPLICATION TO STUDIES OF CONTINUING CARE

An Overview of Economic Analysis

There is a growing literature on the techniques of economic analysis in health care. A number of excellent books and articles have been published on this topic (Donaldson, 1990; Drummond, O'Brien, Stoddart and Torrence, 1997; Drummond, Stoddart and Torrence, 1987; Eisenberg, 1989; Ganiats and Schneiderman, 1988; Stoddart and Drummond, 1984a, 1984b; Weinstein, 1990). Drummond et al. (1987) note that economic analysis deals with two aspects: the inputs and outputs, or costs and consequences, of activities; and, choices between alternatives. Thus, economic analysis can be defined as: "the comparative analysis of alternative courses of action in terms of both their costs and consequences" (Drummond et al., 1987, p. 8). Drummond et al. (1987) have developed a typology for the different types of economic analysis based on the dimensions of inputs and outputs, and choices about alternatives. This schematic is presented in Figure A-1. The primary area of interest for this study is box 4 in Figure A-1, full economic evaluation, particularly cost-minimization and cost-effectiveness analysis.⁵¹

⁵¹In contrast to Drummond et al. (1987), some researchers consider cost-minimization analysis to be a variant of cost-effectiveness analysis. This is an important distinction for continuing care because it uses an ongoing "care," rather than a short term "cure" model of service. Thus, it may be that the "effects" of care are similar, that is, similar levels of satisfaction, similar rates of deterioration and so on. To the extent this is true one could actually do a cost-minimization study instead of a cost-effectiveness study.

Are both costs (inputs) and consequences (outputs) of the alternatives examined?

Is there a comparison of two or more alternatives?		NO		YES
		Examines only consequences	Examines only costs	
	NO	1A PARTIAL EVALUATION Outcome description	1B Cost Description	2 PARTIAL EVALUATION Cost-outcome description
	YES	3A PARTIAL EVALUATION Efficacy or effectiveness evaluation	3B Cost Analysis	4 FULL ECONOMIC EVALUATION Cost-minimization analysis Cost-effectiveness analysis Cost-utility analysis Cost-benefit analysis

(Source: Adapted from Drummond et al., 1987, p. 8)

The types of evaluations noted in the above schematic are as follows:

- . **Outcome Description:** A description of the program or service provided.
- . **Cost Description:** A description of the cost components of the service provided.
- . **Cost-Outcome Description:** A description of both the costs and outcomes of a single service.
- . **Efficacy or Effectiveness Evaluation:** An analysis in which only the consequences of the alternatives are compared.
- . **Cost Analysis:** An analysis in which only the costs of the alternatives are compared.
- . **Cost-Minimization Analysis:** An analysis in which the costs of the alternatives are compared and the consequences of service are deemed to be equivalent, for example, a search for the lowest cost alternative.
- . **Cost-Effectiveness Analysis:** An analysis in which the costs and consequences of programs are measured in comparable, appropriate, natural physical units, for example, costs are related to a single effect which may differ in magnitude across alternatives.
- . **Cost-Utility Analysis:** An analysis in which the costs and consequences of programs are measured in time units adjusted by health utility weights, for example, costs are related to one or more effects, which are not necessarily common to each alternative, by a standardized utility measure such as quality-adjusted life years.
- . **Cost-Benefit Analysis:** An analysis in which the costs and consequences of programs are both valued in monetary terms, for example, costs are related to one or more effects, which are not necessarily common to each alternative, by the standardized measure of money.

Figure A-1: Types of Economic Analysis

The Techniques of Economic Evaluation⁵²

Design Issues

Methodologically, most of the more advanced techniques of economic analysis have similar characteristics to quasi-experimental research, clinical trials and outcome evaluation. All of these approaches have certain common elements. Some type of program or experimental condition is introduced and applied to some set of subjects, and the consequence of this act is analyzed to determine the nature of the outcome of introducing the program or experimental condition. There is a temporal dimension to this approach such that the intervention is typically done at one point in time and the consequences of that action are studied over time. Programs receiving the experimental condition, can be compared to control groups or to alternative programs. For health care, the underlying assumption for this type of analysis is often a "cure" model of treatment, that is, some short term curative intervention is applied to alleviate or "cure" a given problem, for example, mending a broken leg. Currently, a great deal of economic analysis seems to be focussed on evaluating the benefits of new drugs, that is, the economic evaluation of clinical trials for new drugs.

⁵²There are a number of issues to be addressed in doing an economic analysis. This section provides an overview of some of the most common issues. For a detailed protocol for doing economic analysis the reader is referred to the report *Guidelines for Economic Evaluation of Pharmaceuticals; Canada*, published by the Canadian Coordinating Office for Health Technology Assessment CCOHTA (1997). For an excellent review of economic analysis the reader is referred to the book *Methods for the Economic Evaluation of Health Care Programmes* (Drummond, Stoddart and Torrence, 1987; Drummond, O'Brien, Stoddart and Torrence, 1997).

Perspective

Perhaps the most essential feature of an economic analysis is the perspective inherent in the question being asked. Perspective has significant implications for analysis. Ideally, the widest range of costs and benefits should be considered in doing an economic analysis, that is, the perspective of society as a whole. However, this is often not done in actual studies. Rather, writers often consider costs and benefits from a more restrictive perspective, for example, the government, the agency, or the client. Even within a government or funder perspective one may only consider a given agency, or type of service, rather than the whole system of care. By not adopting a comprehensive perspective one may, however, come to erroneous conclusions. For example, consider 1) clients who pay a user fee for homemaker services but who pay no fee for home nursing care services, 2) a government which wishes to reduce costs, and 3) a home care agency which wants to maximize profits. Government may ask for an economic analysis of a new program where certain functions typically provided by nurses are transferred to homemakers through a transfer of function agreement. An economic analysis is conducted, from the government perspective, which shows that 20 percent of the volume of work can be transferred and that homemakers are paid half as much as home care nurses. This finding tells government that it can save 10 percent of the costs of its home nursing care program by instituting the transfer of function program.

The client sees it differently. Clients who are affected may pay more for the added homemaker service (for which they may pay a user fee) than they would if nurses, for which no user fee is required, continue to provide the service. The position of the agency in this scenario is determined by its comparative profit margins for nurses versus homemakers.

Depending on the relative ratios of user fees, and staff specific profit margins, the result of adopting the program, when all matters are considered together, could be: no actual change but a cost-shift from government to clients and/or agencies; an actual overall saving, but less than projected from the government perspective alone; or, an actual increase in overall costs, particularly if homemakers take longer to provide the service than nurses.

There is also a fourth group which could be affected, that is, informal caregivers such as family members. Homemakers may provide care to the client but may not teach family members how to care for the client in a correct and efficient manner. To the extent that nurses do so, there could be a differential impact on the amount of time and resources family members would have to devote to caring for the client. Time may constitute real direct costs to family members if they take non-paid leave from work. Even if they do not, other costs are still incurred as in economic analysis one typically also includes non-monetary costs in a complete analysis. Thus, the decision to transfer nursing functions to homemakers may have economic impacts not only on the government, the agency, and the client, but also, on the client's family.

Determining Costs

As noted above, one must properly consider what is the appropriate range of costs and benefits to be included in a given study. Table A-1 presents definitions for a number of different types of costs used in economic analysis. Table A-1 and the other tables in this section are presented to provide the reader with a sense of the complexity of appropriately calculating costs.

Table: A-1

Types of Costs

NAME	DEFINITION
Total Costs	Costs of producing a particular quantity of output.
Fixed Costs	Costs which do not vary with the quantity of output in the short run (about one year), for example, rent, equipment lease payments, some wages and salaries. These are costs which vary over time, rather than quantity.
Variable Costs	Costs which may vary with the level of output, for example, supplies, food, fees for service, salaries and wages for non-core staff.
Capital Costs	Costs required to purchase the major capital assets required by an agency such as land, buildings and equipment. To the extent that consistent payments are made on an annual basis, capital costs are a sub-set of fixed costs.
Operating Costs	Cost which are not capital costs .
Overhead Costs	An accounting term for resources which serve many different departments or programs, for example, hospital administration, central laundry, medical records, cleaning, electricity/power.
Average Costs	The average cost per unit of output.
Marginal Costs	The additional, or extra, cost of producing one extra unit of output.
Per Diem Costs	The average cost per client per day. Per diem rates can be calculated for total costs but are more typically calculated for operating costs as capital costs are often handled separately.
Opportunity Costs	The value of foregone benefits because the resource is not available for its best alternative use. In efficient markets the opportunity cost is the market price.
Non-Market/Indirect Costs	Costs which do not have an existing, or direct, market value, for example, volunteer time, family time, leisure time.

Source: Adapted from Drummond et al., 1987.

An important issue in costing is how to assign costs for non-market goods such as the time of family members. Drummond et. al. (1987) note that there are four possible approaches, the first two of which are the most common. The four approaches are:

- **Market valuations**—taking actual valuations where these exist (for example, for most resource items) or imputing valuations by reference to the market price of similar commodities (for example, the value of housewives' time could be imputed by reference to the wages paid to domestic staff) [*sic*].
- **Client's willingness-to-pay estimates**—assessed directly (by asking them) or indirectly (by observing their behaviour) (for example, asking people what they would pay for a quicker form of travel, or observing the trade-offs they make between expenditures and travel time savings).
- **Policy-makers views**—either explicitly stated or implicit in their actions (for example, the decisions made about building safety regulations could be used to impute policy-makers' valuations of human life).
- **Practitioners' views or professional opinions**—such as those on the appropriateness of different forms of care for given categories of patients (for example, court awards might be used to impute the value of the unpleasantness of a disfiguring injury).

(Adapted from Drummond et. al., 1987, pp. 149-150.)

Donaldson (1990) provides a very useful checklist for costing health care in economic evaluations. This checklist is presented in Table A-2.

Another important aspect of costing is that of **discounting**. In economic analysis, future costs, and benefits, are discounted back to present values. Thus, the further out in time a cost or benefit occurs, the lower is its present value because it is discounted at a given annual rate e.g., 5 percent. Discounting is done because it is believed that people have a "time preference," that is, goods received now have a higher value than goods received in the future.

Table: A-2

Check List for Costing Health Care in Economic Evaluation

-
1. What are the alternatives being costed?
 2. From whose viewpoint(s) are costs being estimated?
 3. What costing question is being asked?
 4. What resources are used by each of the programs to be evaluated?
 5. Which of these resources incur true opportunity costs?
 6. Which groups in society bear the burden of the cost of these resources: health services; other social services; insurance companies; clients; clients' families?
 7. Are there any production effects associated with client participation in the program?
 8. Are there costs identified which would have no impact on the result of the evaluation or whose collection requires too much research effort relative to their impact?
 9. Can results be expressed in terms of quantities of resources used as well as their prices?
 10. Do readily available market values exist for (staffing, consumable, overhead and capital) items costed? If not, from where can imputed values be obtained?
 11. Are costs spread over a number of years, thus raising the importance of:
 - counting costs in a base year?
 - discounting?
 12. What is the decision context with respect to average and marginal costs? Are we talking about the introduction of a totally new program or the expansion of an existing program, or a comparison of a new with an expanded program?
 13. Can patient-based costing be carried out? If not, how can accurate *per diem* costs be obtained?
 14. What are the appropriate mechanisms for the allocation of overhead costs to the programs?
 15. What is the appropriate length of life to apply to capital assets used in the programs?
 16. Do market values accurately reflect opportunity costs?
 17. Has sensitivity analysis been carried out? The most likely candidates for sensitivity analysis are:
 - production effects
 - items excluded because of effort required to collect data
 - imputed values
 - discount rate
 - lengths of life of capital items
-

Source: Donaldson (1990), p. 354.

If an inflation factor is added to "time preference" discounting, one is said to be using an inflation adjusted discount rate.

Determining Benefits

It is usually difficult in a health related cost-benefit study to value the outputs of health care interventions in strictly monetary terms. One can try to ascribe costs to a life saved but determining the cost of a human life is controversial, and, analysts who have attempted to do so typically come up with a wide range of costs. One can also attempt to assign dollar values to foregone income or the willingness to pay for avoiding some condition. Currently, there appears to be little substantive consensus on the valuation of the benefits of health interventions in monetary terms.

The outcomes in cost-utility analysis are measured in Quality Adjusted Life Years (QALY). This is an advance over cost-effectiveness analysis in that one can incorporate the quality of the life years saved into the analysis. QALY scores can be determined in a number of ways. One may wish to adopt values already published in the literature, conduct studies of persons with a given condition to obtain their utility scores for given conditions, ask experts such as physicians to assign values to different conditions, or, ask informed members of the general public to assign values. Any given set of QALY scores should be subjected to extensive sensitivity analysis, and to analyses of their validity and reliability.

In cost-effectiveness analysis, no attempt is made to place a monetary value on the quality of outcomes. The outcomes are measured in appropriate natural or physical units such as years of life gained. The result of a cost-effectiveness analysis, therefore, is a

determination of the relative cost per unit, for example, cost per year of life gained. Totally different interventions, for different groups of people, can thus be compared to determine where one can have the most impact, for example, maximize the number of life years saved for a given cost. In cost-minimization analysis, the benefits are assumed to be equivalent. Therefore, no valuation is required except for the valuation of the costs of two or more programs.

Sensitivity Analysis

A sensitivity analysis is another aspect of economic analysis which allows the investigator to determine the extent to which the results of a study differ when different values, or assumptions, are used for certain key aspects of the analysis, for example, how different are the outcomes of a study if one varies the calculation of the costs of informal care from costs based on the minimum wage to costs based on market rates for similar work. Again, this discussion is provided to familiarize the reader with the methods of economic analysis.

Drummond et al. (1987) note that the steps to be taken in conducting a sensitivity analysis are as follows:

- Consider which of the estimates made in the analysis are:
 - subject to debate because no estimates were available and informed guesses were made (for example, the effectiveness of new, unproven, medical procedures);
 - subject to debate because of known imprecision in the estimation procedure (for example, hospitalization costs based on average, *per diem*, figures);

- subject to debate because of methodological controversy or the potential for different value judgements (for example, the choice of discount rate).
- Set upper and lower bounds on the possible range of estimates. Depending upon the source of uncertainty or debate surrounding the estimations, this might be done by:
 - considering empirical evidence from other research studies;
 - considering current practice in the literature;
 - soliciting judgements from those who will be making decisions based on the cost-effectiveness study.
- Calculate study results based on combinations of the "best guess", "most conservative" and "least conservative" estimates of the variables concerned.

Key Elements of an Economic Evaluation

Table A-3 presents an excellent overview of the key elements which should be included in an economic evaluation, and which should be used to evaluate the quality of published studies.

A Critique of Economic Analysis and its Application to Continuing Care

Introduction

Numerous critiques have been made of the utilization of economic analysis in health care. Critiques have been made on ethical and philosophical grounds, on methodological grounds, on the grounds of political ideology, and on the grounds that current methods are not applicable to all circumstances, especially the care of the elderly.⁵³

⁵³For a review of the critiques of economic evaluation the reader is referred to Hollander (1996).

Table: A-3

Ten Questions to Ask of Any Published Economic Evaluation

1. Was a well-defined question posed in answerable form?
 - a) Did the study examine both costs and effects of the service(s) or programme(s)?
 - b) Did the study involve a comparison of alternatives?
 - c) Was a viewpoint for the analysis stated or was the study placed in a particular decision-making context?

 2. Was a comprehensive description of the competing alternatives given (that is, can you tell who did what to whom, where, and how often)?
 - a) Were any important alternatives omitted?
 - b) Was (should) a "do-nothing" alternative (have been) considered?

 3. Was there evidence that the programmes' effectiveness had been established?
Was this done through a randomized, controlled clinical trial? If not, how strong was the evidence of effectiveness?

 4. Were all important and relevant costs and consequences for each alternative identified?
 - a) Was the range wide enough for the research question at hand?
 - b) Did it cover all relevant viewpoints (for example, those of the community or society, patients and third-party payers)?
 - c) Were capital costs as well as operating costs included?

 5. Were costs and consequences measured accurately in appropriate physical units (for example, hours of nursing time, number of physician visits, days lost from work or years of life gained) prior to valuation?
 - a) Were any identified items omitted from measurement? If so, does this mean that they carried no weight in the subsequent analysis?
 - b) Were there any special circumstances (for example, joint use of resources) that made measurement difficult? Were these circumstances handled appropriately?

 6. Were costs and consequences valued credibly?
 - a) Were the sources of all values (for example, market values, patient or client preferences and views, policy makers' views and health care professionals' judgement(s)) clearly identified?
 - b) Were market values used for changes involving resources gained or used?
 - c) When market values were absent (for example, when volunteers were used) or did not reflect actual values (for example, clinic space was donated at a reduced rate) were adjustments made to approximate market values?
-

Table: A-3 (Continued)

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- d) Was the valuation of consequences appropriate for the question posed (that is, was the appropriate type, or types, of analysis - cost-effectiveness, cost-benefit or cost-utility - selected)?
7. Were costs and consequences adjusted for differential timing?
- a) Were costs and consequences that occurred in the future "discounted" to their present values?
 - b) Was any justification given for the discount rate used?
8. Was an incremental analysis of costs and consequences of alternatives performed?
Were the additional (incremental) costs generated by the use of one alternative over another compared with the additional effects, benefits or utilities generated?
9. Was a sensitivity analysis performed?
- a) Was justification provided for the ranges of values (for key parameters) used in the sensitivity analysis?
 - b) Were the study results sensitive to changes in the values (within the assumed range)?
10. Did the presentation and discussion of the results of the study include all issues of concern to users?
- a) Were the conclusions of the analysis based on some overall index or ratio of costs to consequences (for example, cost-effectiveness ratio)? If so, was the index interpreted intelligently or in a mechanistic fashion?
 - b) Were the results compared with those of other studies that had investigated the same questions?
 - c) Did the study discuss the generalizability of the results to other settings and patient/client groups?
 - d) Did the study allude to, or take account of, other important factors in the choice or decision under consideration (for example, distribution of costs and consequences of relevant ethical issues)?
 - e) Did the study discuss issues of implementation, such as the feasibility of adopting the "preferred" programme, given existing financial or other constraints, and whether any freed resources could be used for other worthwhile programmes?
-

Source: Adapted from Drummond and Stoddart (1985), p. 365.

The Application of Economic Analysis to Continuing Care

With regard to continuing care, Emery and Schneiderman state that cost-effectiveness analysis, "is intrinsically biased against the elderly, any program comparing treatment for the elderly with treatment for the young will be disadvantaged" (Emery and Schneiderman, 1989, p. 12). The above is so because any life saving intervention will appear more effective for the young, as they have longer to live. They note that, "These biases can be very significant. In one study, the cost per additional year of life of cholestyramine therapy to reduce blood cholesterol was \$56,000 for thirty-five to thirty-nine year-old men, but at least \$1,000,000 for men over seventy" (Emery and Schneiderman, 1989, p. 12).

Avron (1984) provides an excellent critique of the use of economic analysis in geriatric care. He notes that formal health costs can vary for two similar clients from a cost of \$35,000 per year in a nursing home, to zero, if an unemployed family member provides care, or anything in between. "The cost of chronic illness, if measured in terms of medical services received, may be first and foremost a function (with enormous variance) of the idiosyncrasies of a particular health-care context rather than a true measure of the cost of the illness" (Avron, 1984, p. 1296).

The problems of measuring benefits in dollar terms can be significant. For instance, in the human capital approach, which is based on projected remaining lifetime earnings, the value of someone who retires plummets because of their reduced earnings. Avron (1984) shows an example from a study which compared the value of a human life at various ages. In later years women have a higher value than men because they do housework and men are assumed to lead minimally productive lives. He notes that at age 20-24 the value of a male

life is \$170,707 (in 1977 dollars) while it is \$934 for someone 85 years of age or older. The comparable figures for females are \$133,238 and \$5,705, respectively. When such figures are used in comparative analyses of the health impacts of given interventions, the elderly fare poorly. Avron concludes that the "logic of the human-capital argument would thus be perfectly consistent with the concept that euthanasia (or at least nontreatment) after retirement is the geriatric intervention with the most favourable benefit-cost ratio" (Avron, 1984, p. 1297). He also notes that the human capital approach does not take into account the pain and suffering of chronically ill elderly persons as, in this approach, one is simply either alive or dead.

It is argued that the willingness-to-pay method is a better approach for a number of reasons, including the fact that one can incorporate pain and suffering into the analysis. However, one's willingness to pay has been shown to vary by income. As most elderly persons are poor, this again discriminates against them.

A proposed advance, which overcomes some of the problems noted above, has been the adoption of cost-utility analysis and QALYs. However, this approach is still biased against the elderly because they have fewer years to live and may already be operating at a sub-optimal level because of chronic disabilities, that is, the base of the QALY for a young healthy person is 1.0 while the base for an elderly person may be 0.5. If they have a problem, and a given intervention brings them back to their best level of functioning, that is, their base level, then each future year may count for more for the young person than for the old person. Avron (1984) also questions the scientific merit of the methodological approach to constructing QALY weights. He notes that in a survey of healthy persons, respondents, in

aggregate, gave an average quality-adjusted value of 0.32 as the worth of one year of life on renal dialysis. A sample of actual dialysis patients provided a score of 0.52. He further notes that there is considerable variability in scores among ostensibly similar individuals. In fact, he notes that the "variability from patient to patient will often dwarf differences from condition to condition—differences on which the whole approach [of QALYs] rests." (Avron, 1984, p. 1299).

The Appropriate Use of Cost-Effectiveness Analysis

Avron (1984), while critical in general, does note that cost-effectiveness analysis, as opposed to cost-benefit and cost-utility, analysis, can be a potentially valuable tool if used to compare the relative efficacy of different means, or programs, for achieving a particular goal. Cost-effectiveness, and particularly cost-minimization, analysis are simpler models and do not rely to the same extent on the detailed quantification of benefits. Thus, they may be less precise but they also avoid some of the pitfalls of the more precise techniques. Emery and Schneiderman (1989) present a number of situations in which cost-effectiveness analysis can be used as an appropriate technique. These are:

- **Comparing alternative treatments for an identical goal**

If outcomes are truly comparable, then cost-effectiveness analysis serves to find the most frugal way to attain an established goal (some writers would refer to this as cost-minimization analysis).

- **Determining the most effective utilization of funds earmarked for a specific population**

As long as there is a clear target population, cost-effectiveness analysis can help to determine which one, of a set of alternative programs, provides the most of the outcome desired for a given funding envelope.

- **Providing empirical support for the adoption of previously under-funded medical programs**

Demonstrating that existing and exciting, but underfunded, programs are particularly cost-effective.

- **Exposing noncostworthy care**

Noncostworthy care can be identified through cost-effectiveness analysis. Examples of noncostworthy care include: care that is relatively inefficient when compared to alternative therapies for the same goal; care that, though inexpensive, provides no benefits; and, care that provides definite benefits but at a great expense.

Discussion

The philosophical and methodological foundations of economic analysis have implications for the application of some forms of economic analysis to the longer term care of the elderly. In long term care there may be no clear temporal dimension with a beginning and end point, because this sector of our health system uses a "care" model, not a "cure" model of treatment. The goal is the alleviation of suffering, client satisfaction, and a slowing down of the rate of deterioration in physical and mental functioning. In other words, the care provided is ongoing. The experimental and temporal assumptions of some aspects of economic analysis may not apply. There is generally no time limited intervention, for example, a kidney transplant, which does or does not produce positive effects over time after the intervention has been applied. To the extent that this is true, it is more difficult, under

a number of circumstances, to conduct cost-benefit and cost-utility analyses in the continuing care sector. Perhaps the most appropriate form of analysis for much of the continuing care sector may be cost-minimization analysis, at least until there are significant improvements in methodology. Providing appropriate care is an equivalent activity, or consequence, for persons at the same level of care, across different settings, for example, care in the home versus care in a long term care facility. Thus, the only matter of interest is the relative cost of each form of care. If outcomes such as satisfaction with care or differential rates of deterioration in different settings can be quantified, one could engage in other forms of economic analysis, such as cost-effectiveness analysis. It would be desirable to do more sophisticated types of economic analysis but further methodological development is required in the continuing care sector before this can readily be done. This applies not only to the quantification of outcomes, but to other basic aspects of economic analysis as well. For example, most calculations of quality-adjusted life years have a cut-off of 75 years of age. What relevance can this have to a sector where the average age of persons in long term care facilities is about 85 years? If further methodological development is not done, or current approaches are applied, the method used may in itself result in a form of "ageism" in which identical interventions, for persons with identical problems, will result in different economic outcomes based solely on the age of the persons in question. While this type of difference is, in fact, a feature of cost-utility analysis, its implications appear to be less severe for studies of persons in their middle years. In addition, while it may be possible to develop QALYs for various levels of functional status, it is not clear how such QALYs could be used, in a traditional economic analysis, for the reasons noted above. However, it could be

possible to use QALYs to compare persons who receive care versus those who do not in order to quantify the benefits of receiving care in jurisdictions (probably outside of Canada) where not all those in need receive services.

This Appendix has provided an outline of economic analysis, the particular techniques which are used, and a critique of the application of these techniques to continuing care. Economic analysis when used appropriately by knowledgeable analysts, can be an effective input into decision making. While a number of valid critiques have been presented, methodological development is continuing and advancing.

Conclusions

There is relatively little literature on the cost-effectiveness of continuing care service delivery systems, the topic for this study. Thus, the findings from this study could constitute a meaningful addition to knowledge and serve to stimulate additional work in this area by other researchers.

It was noted that there are some unique aspects to a “care” based system which may pose methodological challenges for the extension and refinement of the technique of economic evaluation. This, again, could serve as a fruitful area of inquiry in the future.

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