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 Pharmcare 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 targeted 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 targeting 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 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.

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.
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. 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 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

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48This was the model in the 1980s. It has changed somewhat with the advent of more managed care models in the 1990s.
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
Table: 7-1

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

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

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 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 units 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 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

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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.

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

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

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

The growth of community 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.

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
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
(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 place 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

<table>
<thead>
<tr>
<th>Weissert’s Seven Reasons</th>
<th>The British Columbia Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Community care is an add-on to other services and is not a substitute for residential care.</td>
<td>Community care demonstrated to substitute for residential care over time.</td>
</tr>
<tr>
<td>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.</td>
<td>Almost all people who are admitted to a facility remain there.</td>
</tr>
<tr>
<td>3. Community care has not reduced the rates of institutionalization.</td>
<td>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.</td>
</tr>
<tr>
<td>4. Patients at high risk are hard to find because they are relatively low in number.</td>
<td>Care finding is not an issue and people who need care can generally find it easily.</td>
</tr>
<tr>
<td>5. Screening and assessment costs are high.</td>
<td>Costs are moderate to low.</td>
</tr>
<tr>
<td>6. Because most community services are small, unit costs are relatively high, due to overhead costs, particularly when all service slots are not filled.</td>
<td>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.</td>
</tr>
<tr>
<td>7. There is limited effectiveness in improving health status.</td>
<td>True, this is a characteristic of a care based system such as continuing care.</td>
</tr>
</tbody>
</table>

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 cannot 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 favor 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, eyeglasses, 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 6, 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 Torrance, 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.¹

The Techniques of Economic Evaluation²

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

¹In 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.

²There 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).
Are both costs (inputs) and consequences (outputs) of the alternatives examined?

<table>
<thead>
<tr>
<th>Is there a comparison of two or more alternatives?</th>
<th>NO</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Examine only consequences</td>
<td>Examine only costs</td>
</tr>
<tr>
<td>NO</td>
<td>1A PARTIAL EVALUATION</td>
<td>1B</td>
</tr>
<tr>
<td></td>
<td>Outcome description</td>
<td></td>
</tr>
<tr>
<td>YES</td>
<td>3A PARTIAL EVALUATION</td>
<td>3B</td>
</tr>
<tr>
<td></td>
<td>Efficacy or effectiveness</td>
<td></td>
</tr>
<tr>
<td></td>
<td>evaluation</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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.

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

Figure A-1: Types of Economic Analysis
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.

**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.

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 healthcare 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. If an inflation factor is added to "time preference" discounting, one is said to be using an inflation adjusted discount rate.
Table: A-1

Types of Costs

<table>
<thead>
<tr>
<th>NAME</th>
<th>DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Costs</td>
<td>Costs of producing a particular quantity of output.</td>
</tr>
<tr>
<td>Fixed Costs</td>
<td>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.</td>
</tr>
<tr>
<td>Variable Costs</td>
<td>Costs which may vary with the level of output, for example, supplies, food, fees for service, salaries and wages for non-core staff.</td>
</tr>
<tr>
<td>Capital Costs</td>
<td>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.</td>
</tr>
<tr>
<td>Operating Costs</td>
<td>Cost which are not capital costs</td>
</tr>
<tr>
<td>Overhead Costs</td>
<td>An accounting term for resources which serve many different departments or programs, for example, hospital administration, central laundry, medical records, cleaning, electricity/power.</td>
</tr>
<tr>
<td>Average Costs</td>
<td>The average cost per unit of output.</td>
</tr>
<tr>
<td>Marginal Costs</td>
<td>The additional, or extra, cost of producing one extra unit of output.</td>
</tr>
<tr>
<td>Per Diem Costs</td>
<td>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.</td>
</tr>
<tr>
<td>Opportunity Costs</td>
<td>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.</td>
</tr>
<tr>
<td>Non-Market/Indirect Costs</td>
<td>Costs which do not have an existing, or direct, market value, for example, volunteer time, family time, leisure time.</td>
</tr>
</tbody>
</table>

Source: Adapted from Drummond et al., 1987.
<table>
<thead>
<tr>
<th>No.</th>
<th>Question</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>What are the alternatives being costed?</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>From whose viewpoint(s) are costs being estimated?</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>What costing question is being asked?</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>What resources are used by each of the programs to be evaluated?</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Which of these resources incur true opportunity costs?</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Which groups in society bear the burden of the cost of these resources:</td>
<td>health services; other social services; insurance companies; clients; clients' families?</td>
</tr>
<tr>
<td>7.</td>
<td>Are there any production effects associated with client participation in the program?</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>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?</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Can results be expressed in terms of quantities of resources used as well as their prices?</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Do readily available market values exist for (staffing, consumable, overhead and capital) items costed? If not, from where can imputed values be obtained?</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Are costs spread over a number of years, thus raising the importance of:</td>
<td>counting costs in a base year? discounting?</td>
</tr>
<tr>
<td>12.</td>
<td>What is the decision context with respect to average and marginal costs?</td>
<td>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?</td>
</tr>
<tr>
<td>13.</td>
<td>Can patient-based costing be carried out? If not, how can accurate per diem costs be obtained?</td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>What are the appropriate mechanisms for the allocation of overhead costs to the programs?</td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>What is the appropriate length of life to apply to capital assets used in the programs?</td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>Do market values accurately reflect opportunity costs?</td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>Has sensitivity analysis been carried out? The most likely candidates for sensitivity analysis are:</td>
<td>production effects items excluded because of effort required to collect data imputed values discount rate lengths of life of capital items</td>
</tr>
</tbody>
</table>

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.³

**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

³For a review of the critiques of economic evaluation the reader is referred to Hollander (1996).
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)

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.
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 then 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 such as 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.